

CHILTON'S

MOTOR AGE

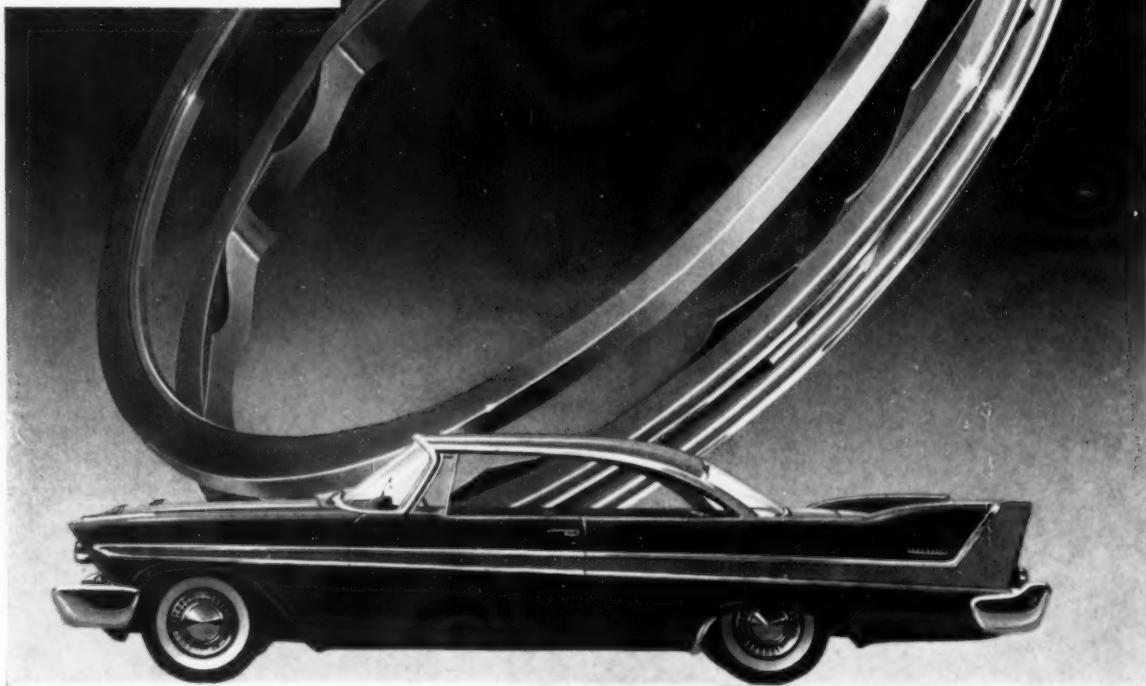
May 1958



**WHO
WILL
COP
THE
MOTOR AGE
TROPHY
AT
INDIANAPOLIS?**

Since 1903...

**PARTNER
IN PROGRESS
to the
AUTOMOTIVE
INDUSTRY**



PLYMOUTH—one of the leading engine manufacturers using Perfect Circle piston rings for original equipment.

Behind the world-wide acceptance of Perfect Circle is a history of more than half a century of PC engineering leadership—and more. There's a history, too, of unceasing creative research... a constant search for the new and the better... matchless manufacturing skills...and scores of contributions to the forward march of the automotive industry, year after year.

Leading manufacturers specify piston rings developed in co-operation with Perfect Circle engineers. You and your customers benefit with Perfect Circle's achievements in engineering, research and manufacturing skills when you install PC rings. Perfect Circle Corporation, Hagerstown, Ind.; The Perfect Circle Co., Ltd., 888 Don Mills Road, Don Mills, Ontario.

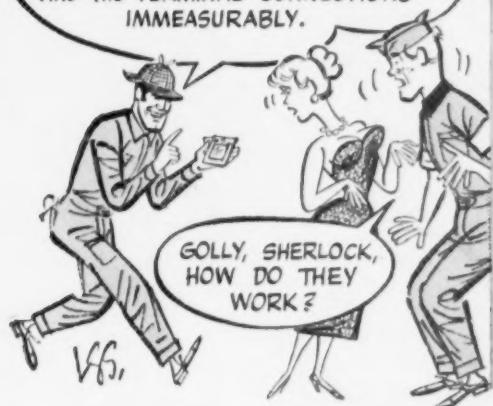
PERFECT CIRCLE  **PISTON RINGS**

ANOTHER **BLUE STREAK**
SECRET SERVICE TIP FOR YOU

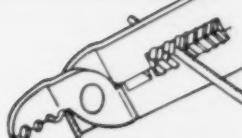
SHERLOCK MCKANICK and MIKE

"...the CASE of the
HOT FINGERS"

SALLY, YOUR ENGAGEMENT IS ON AGAIN. THESE "STANDARD" SOLDERLESS TERMINALS SHOULD IMPROVE MIKE'S LANGUAGE — AND HIS TERMINAL CONNECTIONS— IMMEASURABLY.



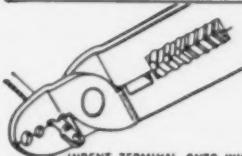
60 SECONDS LATER



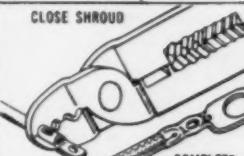
STRIP INSULATION



INSERT CABLE



CLOSE SHROUD



COMPLETE

"HERE'S A PERFECT CONNECTION—WIRE STRIPPED, TERMINAL APPLIED AND CRIMPED IN JUST ONE MINUTE. THE TERMINAL CONNECTION IS STRONGER THAN THE WIRE ITSELF."



DEALERS, YOUR JOBBER HAS PLASTIC BOX STORAGE ASSORTMENT (WITH TOOL) AND HANDY ONE-AT-A-TIME DISPENSER PAKS.



WORLD'S FOREMOST
HEAVY-DUTY
IGNITION LINE

BLUE STREAK

I GO FOR
A MAN WHO
USES
"STANDARD"
SOLDERLESS
TERMINALS!

BETTER
CONNECTIONS
—AND I'LL
NEVER SOLDER
AGAIN.

NO WONDER
42,000 DEALERS
SAY "BLUE STREAK
IS BETTER FOR
YOUR BUSINESS!"

CONTACT POINTS • REGULATORS • SWITCHES • COILS • CONDENSERS • WIRE and CABLE

“... bend over backwards to cooperate with us”

says **EUGENE L. FRAZER**, Chrysler-Plymouth
dealer, Nashville, Tennessee

“We need a financing connection that is fast, efficient and dependable. COMMERCIAL CREDIT PLAN fills the bill completely. In fact, their local office people bend over backwards to cooperate with us. They make our job a lot easier . . . leave us more time to sell cars. We get quick credit checks, and they do an excellent job of handling our customers, particularly those who get into financial difficulties. Their open-minded attitude toward marginal risks helps us reach a greater percentage of potential buyers. Also, in our particular case, COMMERCIAL CREDIT's ability to handle transactions over a wide area and to simplify transfer of accounts from one area to another is important.”



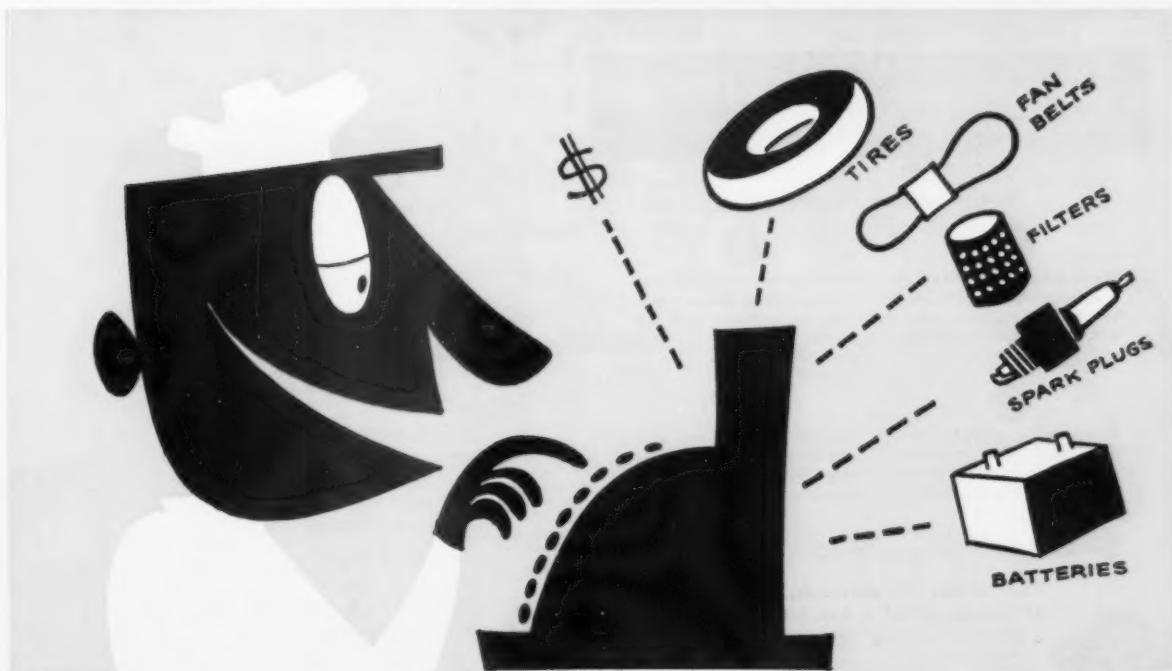
Commercial Credit dealers are successful dealers

Write or call the nearest COMMERCIAL CREDIT CORPORATION office for complete information on the benefits of COMMERCIAL CREDIT PLAN. Why not do it, today?



A service offered through subsidiaries of the
Commercial Credit Company, Baltimore . . . Capital
and Surplus over \$200,000,000 . . . offices in principal
cities of the United States and Canada.

T.B.A. Sales Go Up...



with modern **ARO** LUBE EQUIPMENT

here!

Down with the obsolete! Up with modern ARO Lube Equipment to make more money. ARO helps boost your profits by attracting new customers for lube service . . . getting more cars on the lift where it's easiest to sell replacement tires, batteries and accessories!

Switch to ARO for the most advanced features to save steps, time and effort on every lube job . . . plus eye-pleasing design . . . ARO-engineered dependability. It's the proven way to get top profit in lube service. See your ARO jobber now!

**Get the ARO Exclusive
10,000 Lube Job WARRANTY**

ARO warrants the AL-207 Air Motor to be free from defects in workmanship and materials for 10,000 lube jobs or 3 years, whichever occurs first, from date of purchase.



THE ARO EQUIPMENT CORPORATION
GENERAL OFFICES—BRYAN, OHIO • Plants at Bryan and Cleveland, Ohio
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ARO [®] **LUBRICATION EQUIPMENT**
Automotive—Farm



STOP CUSTOMER COMPLAINTS WITH 4X SILICONE
Prevent body squeaks, sticking windows . . .

**Easy to Apply • Nongumming
Nonfreezing • Nonmelting**

A

Weather-Stripping lubricated and protected—squeaking and sticking stopped; under-carriage rubber mountings and fan belts preserved.

C

Battery Terminals and cases kept clean, corrosion minimized, electrical losses prevented, life of battery prolonged.

B

Radio Antennae sealed and lubricated—for better reception, easier raising and lowering; ideal for window channels.

D

Ignition Systems, magnetos, distributors, spark plugs kept dry, leakage eliminated, wiring preserved.

Specified by leading automobile manufacturers.

Order 4X from your jobber today in 12 oz. spray cans; or as compound in 8 or 2 oz. tubes.

first in
silicones

Dow Corning CORPORATION

MIDLAND, MICHIGAN

CANADA: DOW CORNING SILICONES LTD., TORONTO

Designed to service late model engines which have valve guides cast as part of the cylinder head. In this new type head, it is the valve which has to be replaced. This is accomplished by reaming out the valve guide for oversize stem valves. Most of the engine and valve manufacturers now offer at least three sizes of oversize valves.

The Lee Reamer Guide provides a true alignment with original guide bore using Lee Self-expanding pilots. The reamer is held rigid with reaming bushing during reaming operation. Simple to operate and extremely accurate.

Special sets available to service Ford, Mercury, Lincoln, Chevrolet, Plymouth, Dodge, DeSoto, Chrysler.

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Clip ad to your letterhead and send for Literature.

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Chilton's MOTOR AGE, MAY, 1958

CHILTON'S

MOTOR AGE

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MAY, 1958
Vol. 77, No. 6

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Tung-Sol - First in Headlamps...First in Flashers...Complete in Miniature Lamps

VISION-AID HEADLAMPS

In 1907 Tung-Sol produced the first successful electric headlamp . . . today Tung-Sol Vision-Aid Headlamps—both standard 7" and new duals—enjoy an outstanding reputa-

tion for rugged, dependable service. They take the toughest road conditions in stride and deliver long, brilliant service . . . the kind of service that keeps your customers sold on you.



DUAL VISION-AIDS

4001 single filament 5 1/4" lamp
4002 double filament mate to 4001

STANDARD 7" VISION-AIDS

5040-S, 5400-S, 5440-S for passenger cars,
trucks and buses. 6 and 12 volts



SIGNAL FLASHERS

1939 was the year Tung-Sol manufactured the first flasher ever to appear on the American highway. Today—100,000,000 flashers later—every car and truck manufacturer specifies Tung-Sol as initial equipment. Whatever

the requirement, there's a Tung-Sol flasher to deliver dependable, lengthy service: direction signal flashers, alternating flashers, external, interior and vehicular disability warning signals.



MINIATURE LAMPS

From bumper to bumper and floor to dome—whatever the application—there's a Tung-Sol miniature lamp that fills the lighting requirement—

efficiently, dependably. For both 6 and 12-volt systems. Stock Tung-Sol—the complete line of miniature lamps.

LAMP DIVISION

TUNG-SOL ELECTRIC INC.

NEWARK 4, NEW JERSEY

Sales Offices: Atlanta, Ga.; Columbus, Ohio; Culver City, Calif.; Dallas, Texas; Denver, Colo.; Detroit, Mich.; Irvington, N. J.; Melrose Park, Ill.; Newark, N. J.; Philadelphia, Pa.; Seattle, Wash. Canada: Montreal, P. Q.



MOTOR AGE MEMO

"You Auto Buy" Sure! But Somebody Auto Sell!

HERE'S a young college freshman who is very close to this writer. To keep himself going he has recently taken a part-time job selling from door to door. His job is to stop at every home and ask every one to buy his wares. He likes the work.

"Do you give them that old 'working your way through college' pitch," we asked him. He said no. "I believe that I have something good, something valuable for my customers. They honestly get something for their money."

Mike's living very well on a diet of cold, cold turkey.

"Things We Need."

President Eisenhower suggested in a press conference last month that the nation should "buy." He added that we be selective in our buying, choosing those "things we need."

Now, one of the big needs for all Americans is mobility. Automobile transportation has not suddenly gone out of style. Our roads and streets have not emptied. And, as long as cars are used—new and used cars will be needed—maintenance and repairs will be in demand.

It Says in the Journal

The famed WALL STREET JOURNAL seems to reflect the situation in its headline last month: "Untapped Customers—Many a Motorist, in the Market for a New Car, Is Shunned by Salesmen." If that's true all over

the nation—did salesmanship or the lack thereof create the recession?

Bill McGaughey, vice president of American Motors, out of Detroit got down to Houston and decided to make some cold telephone calls. He telephoned sixteen persons, sold three Ramblers, got three hot prospects and arranged demonstrations for four others.

Maybe we need to take a page from the college freshman's book. He didn't know there was a recession, so he just went door to door and asked people to buy.

Is the A.S.L. Worthwhile?

For one thing, that three colored Automotive Service League certificate shown on Page 69 of this issue is an emblem to be proud of. Hung on the wall of your business it tells the whole motoring public that you have been qualified by MOTOR AGE as a professional service shop contributing to at least 80 per cent of the country's service work.

As a member, you and MOTOR AGE are joined in a determined, continuing effort to make more and better service work available to the motoring public. Sign and mail the postcard for your Automotive Service League certificate. Thousands have done so and have benefited.

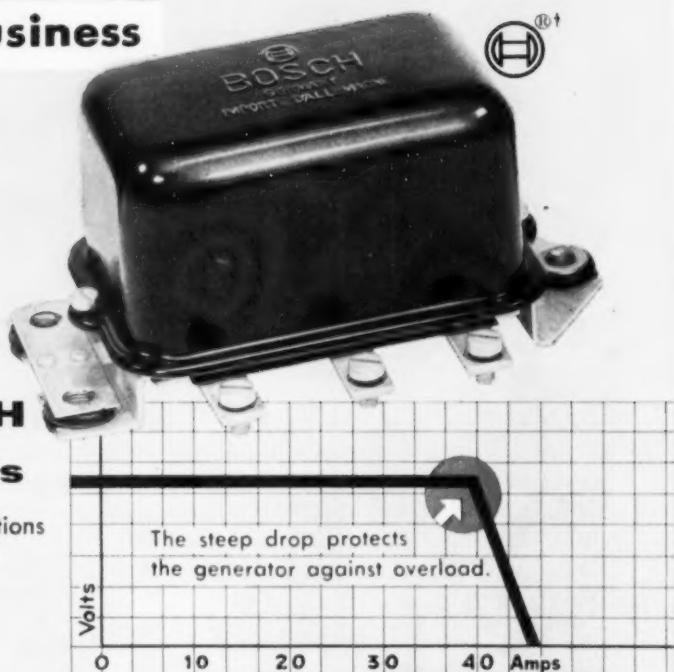
Faithfully yours,

Frank P. Tigher

**\$18⁶⁵ puts any dealer in
the Voltage Regulator
Replacement Business**

**Only 3 types of
ROBERT BOSCH
Voltage Regulators**

cover practically all 6 volt applications
(3 additional types for 12 volt)



The empty battery is rapidly recharged. The fully loaded battery cannot be over-charged. ROBERT BOSCH Voltage Regulators are the most dependable in the world.

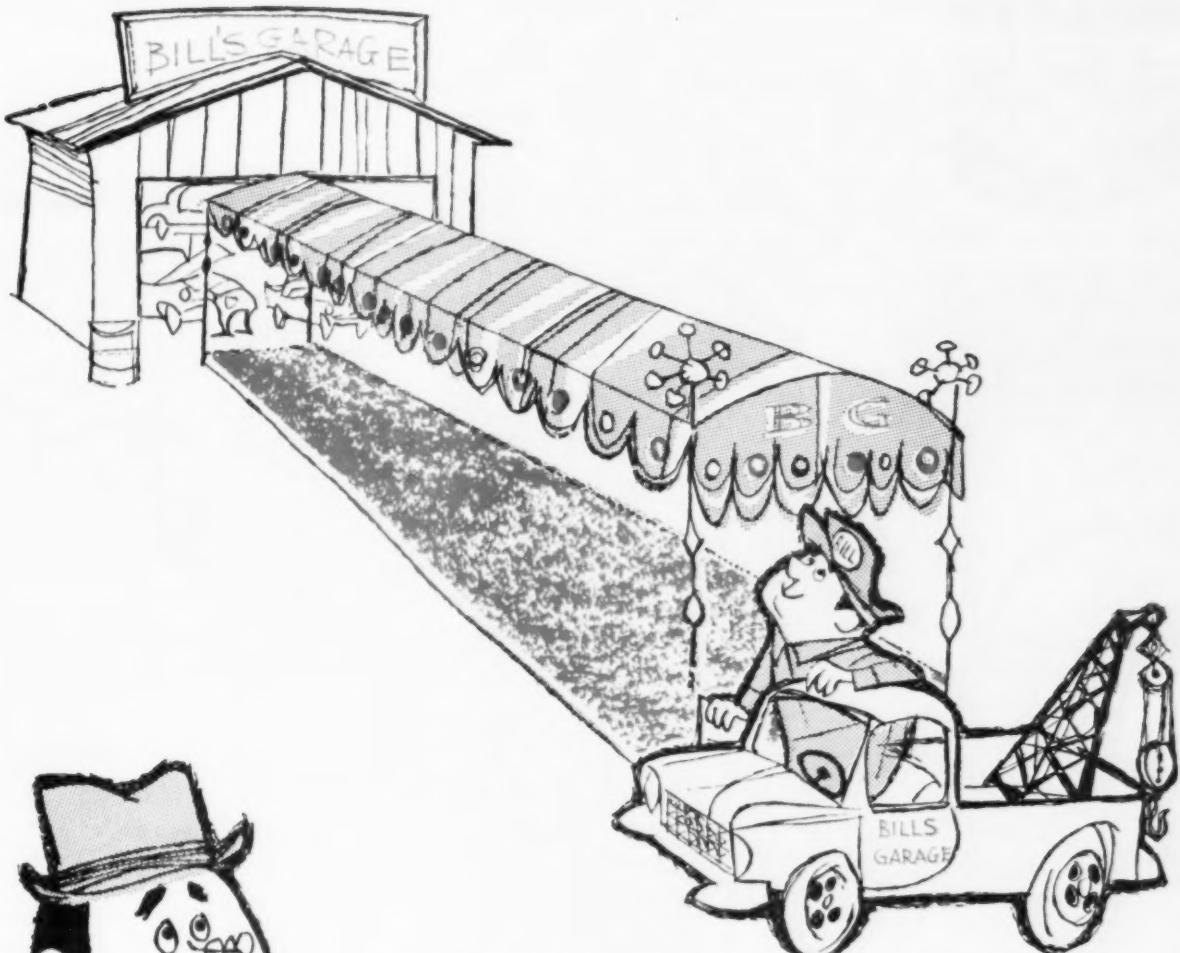
3 ROBERT BOSCH Voltage Regulators are all you need to cover the 6 volt applications on practically all American cars and trucks (3 additional for 12 volt). Get your share of this profitable, big-volume replacement business, without the need for carrying big inventories. For full information and the name of your nearest ROBERT BOSCH distributor write:

ROBERT BOSCH CORPORATION

40-25 Crescent St., Long Island City 1, N. Y.

Branch: 225 Seventh St., San Francisco 3, Cal.

*Registered U.S. Pat. Office. ROBERT BOSCH GMBH, manufacturers of ROBERT BOSCH products.



*Bill really gives
customers the
red carpet*

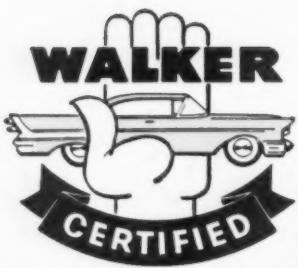
*No, customers bought
it for Bill because he
replaces with
Timken® bearings*

You can be a red-carpet celebrity to your customers by doing good work and using the best replacement parts. So whenever the job calls for a tapered roller bearing, install a Timken® bearing. And tell 'em it's Timken. Customers know a "quality" name when they hear it. And Timken is America's best-known name in bearings. The Timken Roller Bearing Company, Canton 6, Ohio. Canadian plant: St. Thomas, Ontario. Cable: "TIMROSCO".



TIMKEN
TRADE-MARK REG. U. S. PAT. OFF.
TAPERED ROLLER BEARINGS

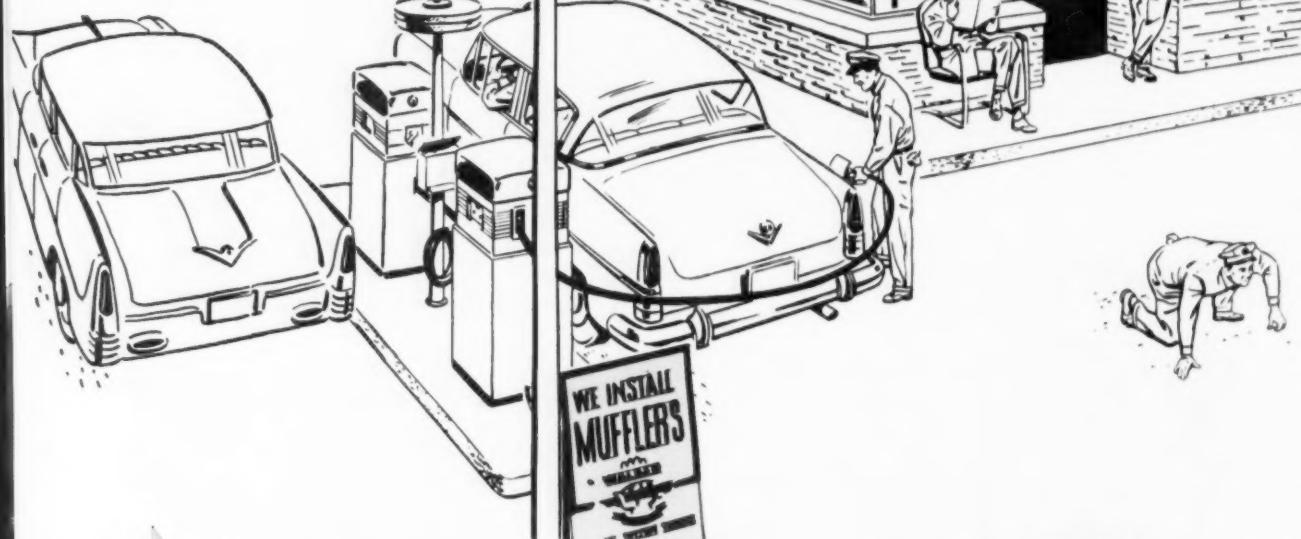
CUSTOMERS LOVE YOU WHEN YOU REPLACE WITH AMERICA'S BEST-KNOWN BEARING...JUST TELL 'EM IT'S...



Exhaust System Service

Nationally Advertised

in POST LIFE



Keep the muffler (where it belongs!)



This program is
sponsored by the

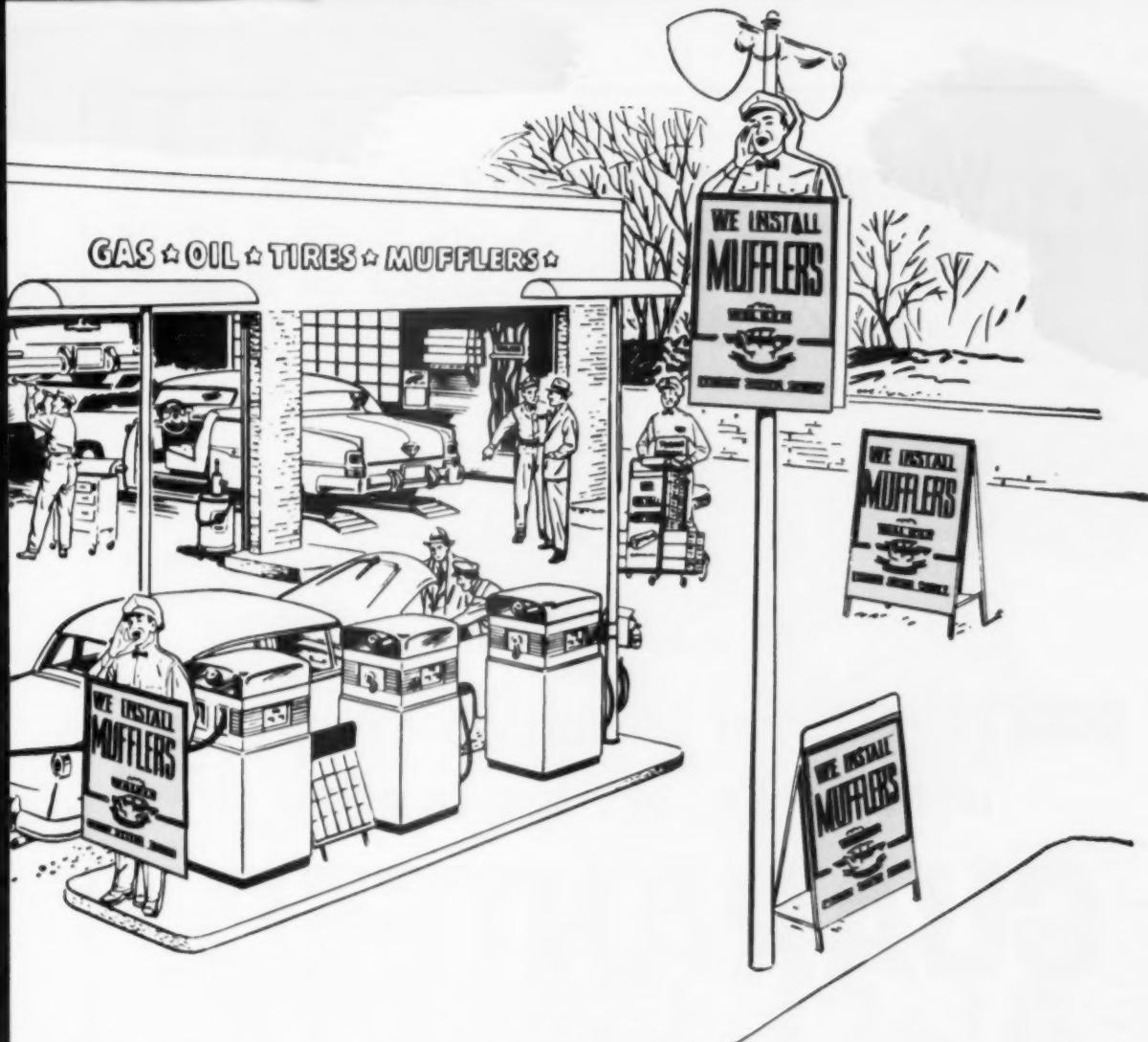
This is it! This is the greatest . . . most potent . . . most complete "muffler business builder" ever developed for independent service stations and repair shops—Walker Certified Exhaust System Service. It has everything!

National advertising to millions of car owners through *The Saturday Evening Post* and *Life*.

Powerful, colorful all-metal station identification to meet every traffic requirement . . . Giant and Standard "A" Boards . . . striking pole mounts for high level visibility . . . all-metal full size cutouts that

WALKER





business "back home"

almost shout "We want your muffler business" . . . tackers . . . swing signs. Plus a complete sales building merchandising plan including Customer Service Certificates . . . a new "How-To-Do-It" Installation Manual with individual vehicle listings . . . new Inspection Tags . . . a Merchandising Guide that shows you how to boost your exhaust system service profits.

—And last but not least, Walker "Precision Tuned" Silencers—built to the highest standards of performance and long life for complete customer satisfaction.

Walker Certified Exhaust System Service really puts *YOU* in the muffler business. Walker Certified Exhaust System Service keeps the muffler business "back home" . . . where it belongs! Find out from your Walker Distributor how you can cash in on this outstanding program.



"Precision
Tuned"

SILENCER

Distributor in
your community



Winter coming early in '58!

SAYS THE OLD FARMER'S ALMANAC



**DON'T WAIT! For full anti-freeze profits
next fall, get set now to offer**

GUARANTEED ANTI-FREEZE PROTECTION

WITH DU PONT ZEREX® ANTI-FREEZE

See your supplier for details! Reserve your ZEREX anti-freeze now!



REG. U.S. PAT. OFF.
BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY



MR-8, the special rust inhibitor in ZEREX, keeps radiators chemically-safe from rust and corrosion!

Valves come clean!



FASTER!

Valves can be cleaned in 15 seconds.

SAFER!

Chuck holds valve; fingers are never near wire brush.

BETTER!

Hardest carbon deposits disappear, leaving a clean, shiny surface.

EASIER!

Takes the drudgery out of valve cleaning. The machine does the work. No skill required.

CHEAPER!

The quick change adaptor allows the brush to be quickly and easily reversed thus bringing sharp cutting points into play. Dull brushes stop cutting. Frequent reversing triples the life of the brush.

**WITH
THE
NEW**

SIOUX



QUICK
CHANGE
ADAPTOR

VALVE CLEANER ATTACHMENT

The **SIOUX Valve Cleaner** can be supplied with bench grinder as shown or sold as an attachment to fit an existing 6", 7", or 8" bench grinder. It's another entirely new product exclusively from SIOUX to you.



ALBERTSON & CO., INC.
SIOUX CITY, IOWA, U.S.A.

NEW AIR IMPACT WRENCHES • NEW AIR SCREWDRIVERS • NEW "PELICAN" NUT ACCUMULATORS •
ELECTRIC IMPACT WRENCHES • DRILLS • GRINDERS • SANDERS • POLISHERS • SCREWDRIVERS
• PORTABLE SAWS • VALVE FACE GRINDING MACHINES • FLEXIBLE SHAFTS • ABRASIVE DISCS



Now you can check rear lights from the driver's seat



Fasten a TELLERSCOPE next to the door track of your lube bay. It sticks to any wall surface and has a 6" wire shaft that allows full swivel for adjustment. Before backing a car off the lift, glance at the TELLERSCOPE. You can check all the rear-end lights of any car from the driver's seat!

For the third straight year, faulty taillights are the nation's No. 1 automobile trouble spot. One out of 5 rejected cars need one or more rear lamps. (Headlamps are third.) So, get in on this big and ready-made market.

A G-E TELLERSCOPE IS FREE when you order a case of G-E *All-Weather* Headlamps. And General Electric is running big, full-page ads in POST, LOOK and POPULAR MECHANICS to pre-sell the motoring public on installing and aiming G-E *All-Weather*

**...with this
New  TELLERSCOPE**

- saves steps • saves time
- increases lamp sales

FREE

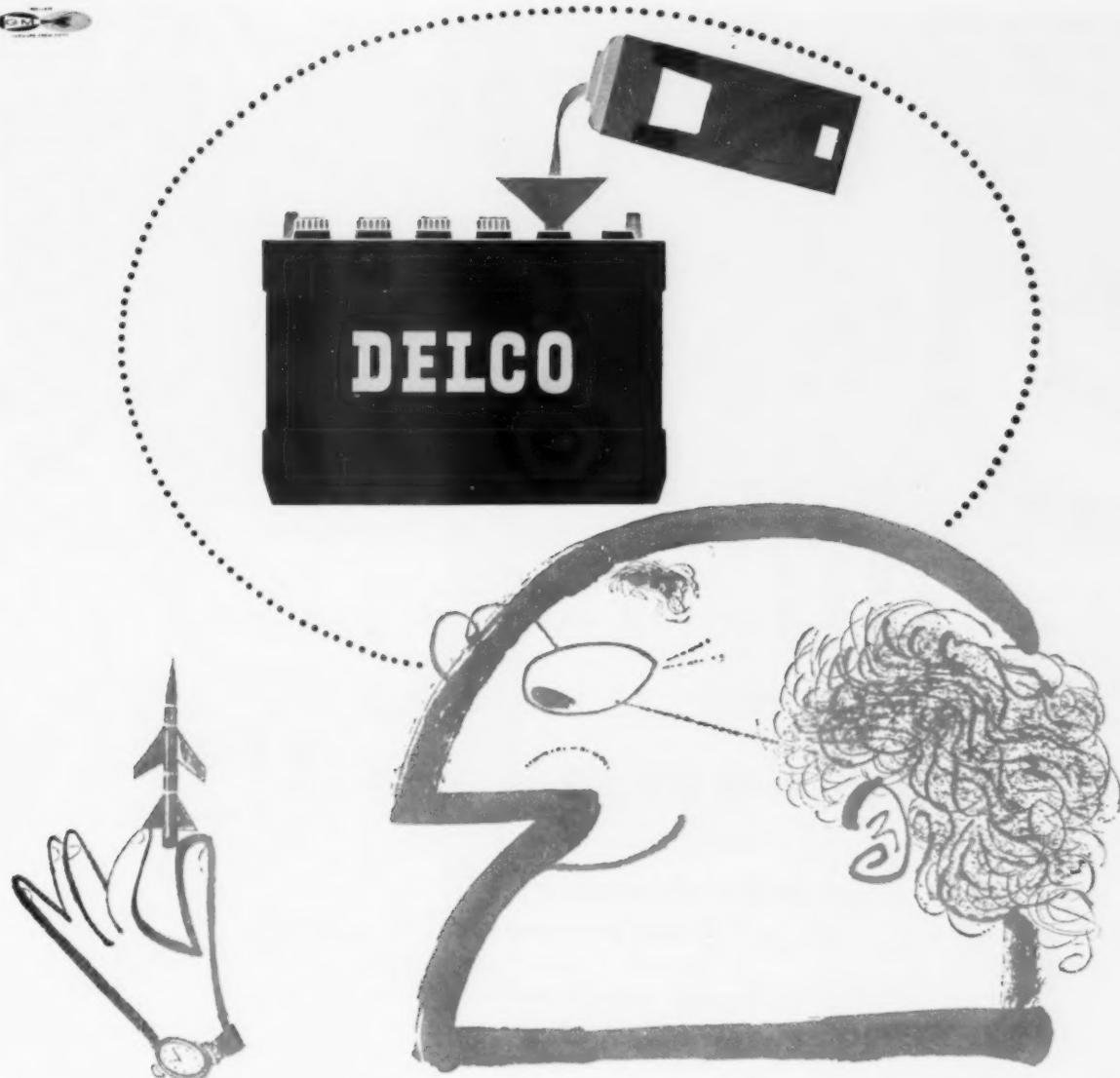
when you order a case of
G-E All-Weather Headlamps

Headlamps . . . and replacing burned out rear lights.

PROFIT AT BOTH ENDS OF A CAR. Sell G-E *All-Weather* Headlamps by the pair . . . and an aiming job. And order a supply of small bulbs for taillights, stoplights, license plate bulbs, etc., in SPACE-SAVER PACKS. They stay neat, no covers or flaps, easy removal, faster inventory. General Electric Company, Miniature Lamp Department MA-58, Nela Park, Cleveland 12, Ohio.

Progress Is Our Most Important Product
GENERAL  ELECTRIC

Chilton's MOTOR AGE, MAY, 1958



GUIDED MISSILE EXPERTS

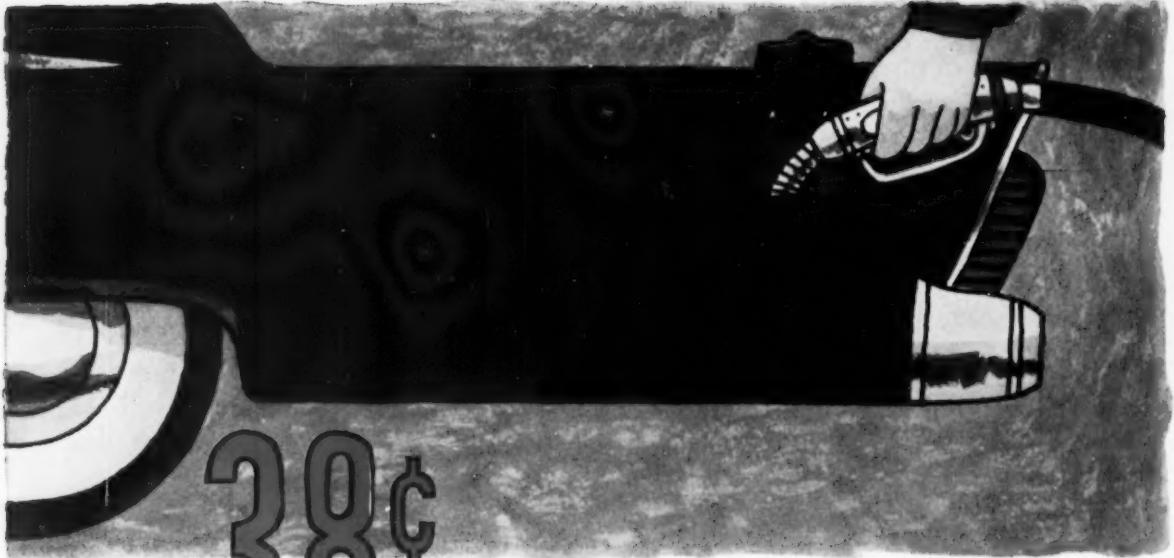
want *Delco DC batteries*. That's why they're easier to sell.

Three separate surveys were made by three different national magazines. All proved that Delco is America's No. 1 battery preference. But why not? Delco Dry Charge batteries stay factory-fresh, they're priced right, and backed by General Motors warranties that are good all over the United States and Canada. More than that—Delco is supported by the strongest advertising in the industry: on TV, "High Adventure with Lowell Thomas"; on radio, Lowell Thomas Newscast; plus full-page ads in Life, Look, Post, and Reader's Digest. Maybe none of your customers are guided missile men, but battery sales will rocket anyhow if you stock Delco. You see, it's easier to *sell* Delco DC, because more people *know* Delco DC.

*Quality built by Delco-Remy
distributed nationally through*



General Motors leads the way—Starting with Delco Batteries



38¢

out of every dollar spent on
automotive products is spent by households
that read a single issue of **LIFE**

Among your customers, LIFE-reading households are big buyers. For in communities everywhere, LIFE reaches 31% of U. S. households in an average week.

And these 31% account for 38% of all consumer automotive expenditures.

This means that 38¢ out of every automotive dollar is spent by households that read a single issue of LIFE.

No wonder in 1957 advertisers invested \$47 million more in LIFE than in the next leading magazine. **No wonder advertising in LIFE is the advertising most often used for tie-in displays.**

Every LIFE household counts. Make sure you get your share of their dollars by featuring the brands that are advertised in LIFE.

Source: LIFE's *Study of Consumer Expenditures*, an analysis of \$200 billion spent by U.S. households for consumer goods and services in 1956.



Only **LIFE** gives you so much selling support...
so swiftly, so surely



NEW ARMSTRONG 100 LEVEL “MIRACLE” TIRE

BORN RICH

in features that sell!

Patented features no other 100 level tire can match
— previously available only in higher-priced

Armstrong Tires! Features that mean safety . . .
features customers can *see!* Yours to sell at highly
competitive prices, without “puncturing” your
proper profit. Greatest business-builder in years.

You'll agree: “It's a Miracle!”

PATENTED SAFETY DISCS

Keep tread always open — so it grips the road to stop
deadly skids as no other tire can.

PATENTED INTERLOCKING SIPES

Increase traction, reduce scuffing that causes tread
wear . . . greatly increase mileage.

SILENT TREAD

Tread pattern varies all over tire to eliminate
resonance. Minimum hum and squeal.

UNICUSHION CONTOUR

Flatter tread when tire is inflated and rolling gives
more contact, more wear.

And — Biggest Selling Feature of All:

STARTLING LOW PRICE!

Sell this Miracle Tire with its
extra-value features at a price to make
ordinary competition look sick!
Greatest competitive story in tires today
... and plenty of room for profit.

ADVERTISING DEPARTMENT
ARMSTRONG RUBBER COMPANY
WEST HAVEN, CONN.

Please rush me full information on

- () New 100 Level MIRACLE Tire
() The Armstrong Tire Line

NAME OF FIRM: _____

ADDRESS: _____

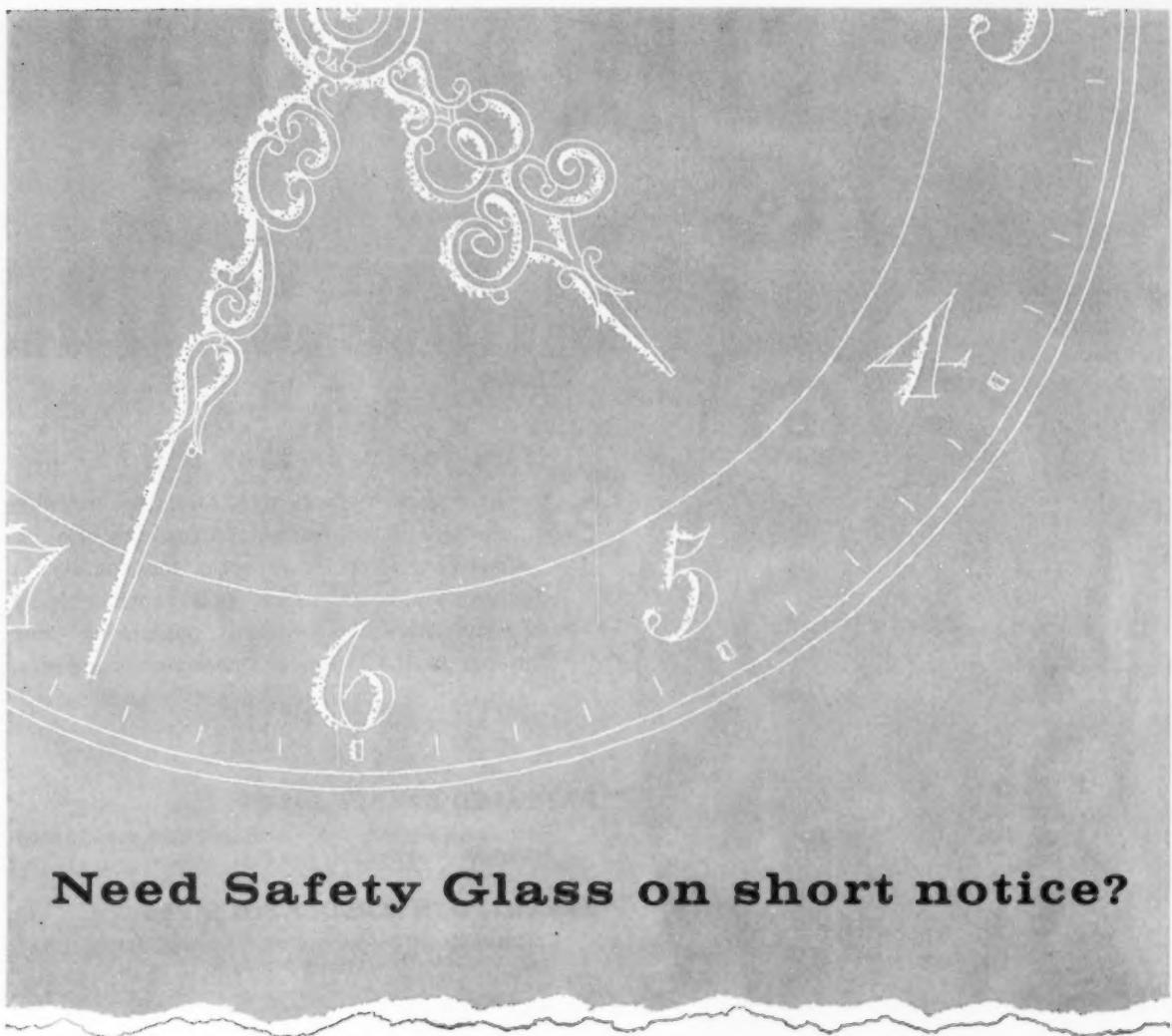
CITY: _____ ZONE: _____ STATE: _____

YOUR NAME: _____

Get the facts — Clip and mail this coupon right now!



Newest member of the
famous “Grip the Road”
Armstrong MIRACLE Family



Need Safety Glass on short notice?

Call Pittsburgh

THERE'S NO NEED to carry large inventories of automotive Safety Glass when you order glass through Pittsburgh Plate Glass Company. No matter what type of automotive glass you must replace, you can normally get it from your nearest Pittsburgh Branch or Distributor on 24 hours' notice.

Don't crowd your shop . . . don't carry large inventories, trying to anticipate your Safety Glass replacement jobs. Let us be your warehouse. When you have a replacement job, just call Pittsburgh. In a matter of hours the exact piece of glass

you need will be in your shop. Your job will be finished and your customer on his way, completely satisfied.

Pittsburgh's facilities give you fast service on all types of Safety Glass, Curved or Flat, Clear or SOLEX®, in DUPLATE® Safety Plate Glass, DUOLITE® Safety Window Glass or HERCULITE® Tempered Plate Glass. For full information, contact your nearest Pittsburgh Branch or Distributor. Pittsburgh Plate Glass Company, 632 Fort Duquesne Blvd., Pittsburgh 22, Pennsylvania.



SYMBOL OF SERVICE FOR SEVENTY-FIVE YEARS
PITTSBURGH PLATE GLASS COMPANY
IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED



THE WASTEFUL WAY



THE MONEY-SAVING WAY

USE A COMPLETE MoPAR SERVICE PACKAGE— *the job's half done before you start*

Think of the head start you get with a complete MoPar Service Package—there's one for every service job. Consider the time and money you save when:

1. Everything you need for the job is packaged ready to go.
2. You're sure of doing every step of the job right the first time.
3. You get convenient charts or complete instructions as an added check.

4. And you're sure that every part is exactly the one for the purpose—each one is an official, authentic Chrysler Corporation part, precision-made for "Forward Look" cars and Dodge Trucks.

Order a complete line of convenient service packages today from your MoPar wholesaler or your local Plymouth, Dodge, De Soto, Chrysler, Imperial or Dodge Truck dealer.

Get MoPar's free "Replacement Parts and Service Guide." Ready now. 100 pages filled with profit-making tips and time-saving instructions on how to repair and service 1946-1958 Chrysler Corporation-built vehicles.

MoPAR
PARTS & ACCESSORIES

MoPar Division, Chrysler Motors Corporation, Detroit 31, Michigan

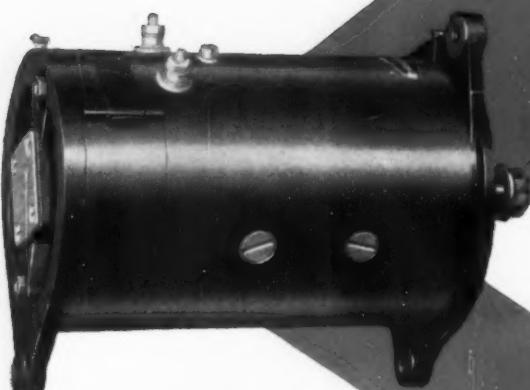
Advertising Department, Parts Division
CHRYSLER MOTORS CORPORATION
P. O. Box 1718, Detroit 31, Michigan
Send me MoPar's free "Replacement Parts and Service Guide."

Name _____

Address _____

City _____ State _____

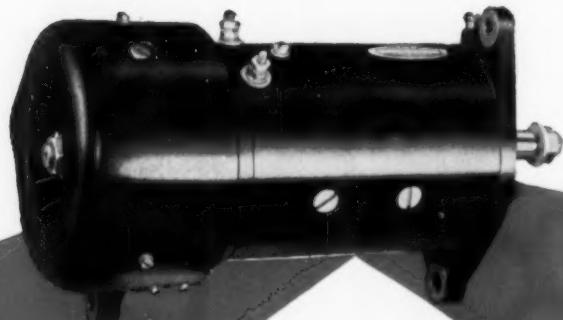
ONLY DELCO-REMY COVERS



FULL LINE OF EXTRA-OUTPUT D.C. GENERATORS
FOR MEDIUM- TO HEAVY-DUTY APPLICATIONS

CHECK THESE EXTRA-DUTY D.C. FEATURES

- Substantial output at engine idle where required
- Greater brush area—better commutation, longer brush life
- Ball bearings at *both* drive and commutator ends
- Sealed field coils—impervious to moisture and corrosion
- Double insulated armature coils—nylon and cotton
- Hot-impregnated armature for extra insulation
- Dynamically balanced armature
- Wider, heavier brushes—service up to 100,000 miles is common



NEW TOTALLY ENCLOSED GENERATORS FOR OFF-THE-ROAD APPLICATIONS

Forced-air cooled for 50% *more output* with no increase in size! Splash-proof. Dust-proof. 6-, 12-, 24-volt d.c. models.

NEW PIGGY-BACK GENERATORS

Extra power with economy! Tailored extra output in single voltage systems. You can use *both* 6- and 12-volt d.c. units on the same vehicle.



ALL THE BASES!

*The only complete
line of both d.c. and
a.c. generators—
right for your job!*



CHECK THESE SUPERIOR A.C. FEATURES

- Greater output at engine idle
- Dependable performance at all operating speeds
- Exclusive self-regulating current control—no current regulator or limiter needed
- Exclusive stainless steel slip rings
- Extra-large ball bearings at both drive and commutator ends
- Shaft-keyed rotors prevent high torque slippage
- Easy all-around maintenance—positive oiler lubrication

Name your generator need. Better charge at engine idle? More power for the ever-increasing demands of more and more electrical accessories? Lower replacement cost for lighter duty operation?

You name it. Delco-Remy meets it. Delco-Remy, in fact, has the *only* complete line of both d.c. and a.c. generators with matching waterproof regulators to meet every fleet requirement. Whether you haul light loads or heavy loads—off the road, around town, or across the nation—at highway speeds or in creeping traffic—Delco-Remy has the *right* generator to fit your need.

The complete Delco-Remy line brings you this important benefit: When you buy these extra-duty generators through the United Motors System, or from your vehicle dealer, you get the tailored performance you need—at minimum cost.

Specify Delco-Remy extra-duty generators on your new equipment, and for replacement on your present equipment. Only the complete Delco-Remy d.c. and a.c. line covers all the bases to fit every generator need.

GENERAL MOTORS LEADS THE WAY—STARTING WITH

Delco-Remy

ELECTRICAL SYSTEMS

DELCO REMY • DIVISION OF GENERAL MOTORS • ANDERSON, INDIANA

AIM TO LIVE

PUTS NEW LIFE INTO SAFETY!



LET HEADLIGHT AIMING BE THE STARTING POINT OF YOUR "SAFETY CIRCLE" CHECK!



Many dealers have offered free headlight aiming in their localities to stimulate immediate action to this night-driving safety service. Other dealers have spearheaded local AIM TO LIVE activity by aiming the headlights on police and municipal vehicles as a public service.

Keep your customers safety-minded, and they'll ask you to keep them safety-serviced. And the best place to start a complete safety check is with headlight aiming.

Aim To Live dealers, who actively promote this program, are enjoying outstanding results. They have built invaluable good will as safety leaders in their community. They have stimulated local action for headlight aiming. And they have aroused greater interest in all-around safety service.

Now's the time to feature headlight aiming! Motorists are preparing for vacation travel and many more miles of nighttime driving. So, be sure you AIM TO SERVE with AIM TO LIVE!

**CHECK
AIM** HEADLIGHTS REGULARLY.
THEM ACCURATELY FOR SAFETY

CHEVROLET • PONTIAC • OLDSMOBILE • BUICK • CADILLAC • GMC TRUCK • GUIDE • AC

General Motors

The Readers Always Write

Doing Two Jobs At Once

Dear Editor:

I am doing O. K., I suppose, but busy in the shop and going for IGOA. Our Nashville unit helped in the forming of IGO Bedford County, Tennessee. Those boys are really going strong now and making a real showing in the Shelbyville area. Luther Turner, Ralph James and I were together in Memphis recently. We have the nucleus of IGO Memphis now.

I made a visit to Glasgow, Ky. recently in an attempt to interest a group there in IGOA. I do

not know the outcome as yet.

Our Nashville unit now consists of 32 of Nashville's better shops and is still growing.

Thanks again for your splendid efforts in behalf of IGOA.
(signed)

W. C. "Josh" Wilder
Tulsa 3, Okla.

Thoughts On Advertising

Dear Editor:

Under the deceptively simple title of "A Few Observations of Advertising," T. F. Hall, Vice President In Charge of Sales Promotion, Walker Manufactur-

ing Company, Racine, Wisconsin, wrote the attached bulletin to the Company's sales force:

A Few Observations On Advertising

To many people advertising is one of those elusive, intangible, immeasurable marketing forces. Somehow we know that when used consistently and intelligently, advertising creates in the "minds of the market" a positive and definite "product image" . . . a feeling of closeness and confidence such as you have for a friend of long standing. Somehow we know that a printed word has more believability than the spoken word . . . that when you "see it in black and white" it must be so. Somehow we know that when a company submits its products openly and publicly to the great court of the final consumer, it gains dignity and stature.

Yes, Advertising is perhaps as
(Continued on next page)

MECHANICS! 2 EASY WAYS TO MAKE MORE MONEY

Learn in your SPARE TIME

AUTOMATIC TRANSMISSIONS
Repair, adjust and overhaul
all types. Hydra-matic, Dyna-flow, Jetaway, Powerflite, Fordomatic-Meromatic, etc.

Write TODAY
for FREE information on either of these
2 great, fully-illustrated, multiple-lesson
HOME STUDY COURSES

LINCOLN TECHNICAL INSTITUTE
SUITE 5-L, 472 MARKET STREET, NEWARK 5, N.J.

SMALL ENGINES
Fix Powermower, Chain Saw,
Garden Tractor, Outboard and
all 2 and 4-cycle gasoline engines. Millions need service.

**Have You Mailed
Your Membership
Postcard?**

See Page 69

Lockport Gasket Racks

Keep Gaskets in Order
for Easy Access
Pays for Itself in One Year



Designed especially for
Auto Dealers and
Garages

Yes, the Lockport Gasket Rack will pay for itself in one year. This heavy gauge steel filing system will end the trouble of torn and misplaced gaskets. Saves valuable floor space and keeps gaskets orderly and instantly accessible. Insures inventory on all sizes and models of gaskets.

Available in 4 sizes, ranging from 5-drawer model to 23-drawer model. Constructed so smaller models can be added to. Drawers can be removed and are interchangeable, but are hinged to prevent being pulled out accidentally.

Write for literature and low prices on this shop necessity.

Lockport Steel Fabricators, Inc.

P. O. Box 67

Lockport, Illinois

Readers Always Write . . .

Continued from page 23

intangible as a handshake . . . as elusive as a smile or a pat on the back . . . as immeasurable as the universe . . . and yet it becomes a definite part of the personal experience of everyone it touches . . . first as a "whisper" in their consciousness and finally as a "shout" in their memory.

The strange thing about advertising in publications is that all advertisements start as a blank page of white paper. How effective that page of paper becomes depends upon *how it is used* . . . what we may have to

say to the thousands of potential customers who see it . . . how we have styled it and dressed it up to demand attention.

There have been many studies made to determine the effectiveness of advertising to assist in the building of more effective advertising. None of them are infallible, for advertising is not an exact science. Two and two does not always make four in advertising . . . sometimes it can make forty!

Perhaps advertising is intangible . . . but, if so, in an intangible way it makes quite an impact. Perhaps an advertisement is no different from a per-

sonal sales contact . . . it's what you put in it that counts.

T. F. Hall
Walker Marketing Corp.
Racine, Wisconsin

Suggests Firing Order Chart

Dear Editor:—

I have a suggestion regarding Motor Age, which I believe would be helpful to many readers.

In each issue a page contains tune-up data. My suggestion is this—every three months why not include a page containing the firing order of all the V-8's, 1946 to date?

The February issue had the tune-up data on heavy paper; if

ONLY Ingersoll-Rand GIVES YOU ELECTRIC and AIR TOOLS FOR THE TOUGHEST JOBS

AIR/SIZE 334 . . . 1¼" DRIVE

This powerful air Impactool provides full power in either direction and easily removes frozen nuts on largest fleet jobs.



AIR/SIZE 7500 TIRE TOOL

No more slugging matches with a sledge hammer to get the tires loose from rims. Now you can knock them loose the quick, easy way, with these powerful, lightweight, air-powered Tire Tools.



AIR / SIZE 8000 TIRE TOOL

Ingersoll-Rand
11 Broadway, New York 4, N.Y.

18-732-1

the firing order data were also on heavy paper, it could be removed from Motor Age and tacked in a handy place for reference.

Wilfred Russell
Salineville, Ohio

Editor's note: We have a pleasant surprise for reader Russell. On page 114 of this issue appears such a chart.

San Antonio Trains Mechanics

Dear Editor:

I find your "Mechanics Training" article very interesting and it touches on some phases of our shortage of mechanics very well; however, I feel that you

fail to point out some of the most important facts.

In my opinion just a few of these basic facts are the lack of true concern by all of us in the automotive field.

It is one thing to talk about a subject and another to do something about it. We, here in San Antonio, Texas, inaugurated the first long-range planned program to train our mechanics. Responsibility of training does not necessarily rest solely within the confines of the classroom, nor is it the responsibility of our school systems to replenish our lost manpower.

Industry discovered many

years ago that it had to entice individuals into its ranks and be prepared to finish their training. With that in mind, our apprenticeship program was set up in cooperation with the U.S. Department of Labor.

You will find it's the only program where the three allied groups of dealer, jobber and independent, are definitely working together in a co-ordinated manner. We have found through many hours of conference that we are able to sit down and attempt to work out these problems.

Henry Rose,
San Antonio 9, Texas

POWER



ELECTRIC

SIZE 34U

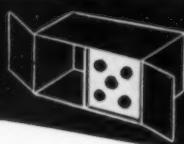
1" DRIVE

This most powerful electric Impactool makes the toughest jobs easy with 900 "rotary" impacts per minute. You can't burn out motor by over-loading. You can see for yourself why there's no other tool like it. Ask your I-R jobber.

18-732



**ONLY INGERSOLL-RAND GIVES YOU
5 SIZES IN ELECTRIC IMPACTOOLS
8 SIZES IN AIR TOOLS**



NOW-put Magic

at home with

FREE!

MAGIC TRICK #2

AMAZE-BAFFLE MYSTIFY-ENTERTAIN



GET YOUR MAGIC TRICK ABSOLUTELY FREE! FILL OUT AND MAIL COUPON!

Hold "Magic Cube" between thumb and forefinger. Show observer different colors of both top and bottom ends.



Invite observer to "wipe away" bottom color with forefinger. Press "Magic Cube" down hard on his finger.



PRESTO . . . the hand is quicker than the eye! Show observer how bottom of cube is now a totally different color.



WILKENING MANUFACTURING CO.

2000 So. 71st Street
Philadelphia 42, Pa.

YES! I want Pedrick to make me a magician.

NAME _____

COMPANY _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____



to work for you...

... in the shop with

FORMFLEX CHROME PISTON RINGS

... REALLY WORK LIKE MAGIC. The ring jobs you can do will make your customers think you are a wizard. Sluggish, tired engines gain new pep, act like new again. Gas and oil consumption are substantially reduced. It's no trick to get a lot of profitable ring jobs when you use Pedrick FORMFLEX Chrome Piston Rings.

PEDRICK'S EXCLUSIVE "EQUALIZER"

Today's most imitated (but not duplicated) feature in oil control rings. This peripheral abutment type expander exerts a soft, but positive and uniform pressure outward all around the cylinder wall. It means new pep and power . . . real oil and gasoline savings . . . even in badly worn engines. All at a price car owners will pay.

PEDRICK'S MORE FLEXIBLE STEEL RAILS

Because of the "Equalizer," and its equal pressure, the ring rails can be made radially thinner, and therefore more flexible, increasing the ability of the oil control ring to conform to the cylinder walls, no matter how worn they are.

PEDRICK FORMFLEX CONSTRUCTION, WITH ITS EQUAL PRESSURE EVERYWHERE, MEANS A MORE PERFECT SEAL

And . . . compression rings and oil control ring rails are faced with SOLID CHROME, can be counted on to last 2 to 4 times longer!!

PEDRICK PERFORMANCE MAKES YOU A MAGICIAN



Pedrick

PISTON RINGS

WILKENING MANUFACTURING COMPANY, Philadelphia 42, Pa. IN CANADA: Wilkening Mfg. Co. (Canada), Ltd., Toronto

Only Champion can tell this story

Q. Why are nearly twice as many police cars in the U.S.A. powered by Champion spark plugs?

A. Champions give full-firing power. Put new Champions in your car every 10,000 miles. You'll get an immediate boost in horsepower...and save gasoline, too!

Please note how it is in a Ford. This is a Champion equipped police car in Florida. It's the first to be equipped with Champion spark plugs.

Q. Why do over twice as many car makers—including Rolls Royce—specify Champion spark plugs?

A. Champions give full-firing power.

Rolls Royce is known the world over as an automobile masterpiece. Look at other great makes of cars. Rolls Royce uses Champion.

Q. Why do all the world's major airlines use Champion spark plugs?

A. Champions give full-firing power. Put new Champions in your car every 10,000 miles. You'll get an immediate boost in horsepower...and save gasoline, too!

In the same way that Champion is used in all major aircraft engines, Champion is used in all major airline planes. Champion spark plugs are used in all major aircraft engines.

Q. Why do 8 out of 10 truck makers use Champion spark plugs?

A. Champions give full-firing power. Put new Champions in your car every 10,000 miles. You'll get an immediate boost in horsepower...and save gasoline, too!

World famous spark plug—engineered for every car built by Ford, General Motors, American Motors, Hudson-Packard and virtually all foreign makes.

Magazines are an excellent way to reach your customers with sales messages like these — because 90% of all U.S. car-owning families read magazines.* Champion is reaching your customers with regular monthly insertions in *Life*, *Post*, *Reader's Digest*, *Look*, *Mechanix Illustrated*, *Popular Mechanics* and *Popular Science*.

*Steward, Dougall & Associates — Survey for M. A. B.

World's favorite spark plug — engineered for every car built by FORD, GENERAL MOTORS, CHRYSLER,

Champion's leadership can mean more spark plug sales for you

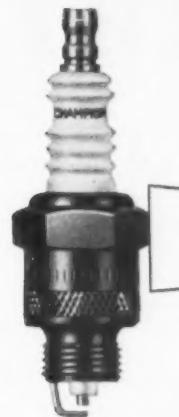
Champion ads are telling your customers why—in fields where peak engine performance is a must—the first choice in spark plugs is Champion—and reminding those customers to install new Champions every 10,000 miles!

● During every month of 1958, full-page advertisements like those shown at left will appear in leading national magazines . . . preselling your customers on the fact that Champions are — in the opinion of experts — the finest spark plugs obtainable.

And every one of these advertisements reminds your customers of the importance of installing new Champions *every 10,000 miles*. This helps make more sales for you!

These ads tell why Champions are the unchallenged leader in field after field. In airlines . . . police cars . . . as original equipment in passenger cars . . . in trucks . . . fire engines . . . outboard motors . . . farm tractors . . . race cars . . . Champions are the No. 1 choice of the experts. Every one of these fields demands the best possible performance from engine components. And — in *every one* — the first choice for spark plugs is CHAMPION.

It's a story that will impress your customers. And — coupled with a strong reminder to install new Champions every 10,000 miles — it's a story that can make *more sales for you*.



America's favorite

CHAMPION

SPARK PLUGS

CHAMPION SPARK PLUG COMPANY • TOLEDO 1, OHIO

AMERICAN MOTORS, STUDEBAKER-PACKARD, and every major foreign maker



The
M.O.A. MYSTERY MAN
has \$5⁰⁰ for you

The next driver who comes into your station may be an M.O.A. "Mystery Man." Over 350 M.O.A. "Mystery Men" all over the U.S. are now making regular stops for gas and oil . . . waiting for you to suggest Du Pont M.O.A. Do this, and the driver will hand you a \$5.00 cash-bonus certifi-

cate. You can win *several* times, so suggest M.O.A. to all your customers. You also get valuable premiums with every carton you buy.



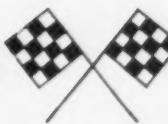
FREE PREMIUM
COUPON WITH
EVERY CARTON



BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

DU PONT N° "7" M.O.A.

SPORTS PAGE



The Saga of Joe the Wrecker

THE next best thing to a lie, Joe Palmer wrote, is a true story that nobody will believe. This one is true, though it does not seem that any useful purpose would be served by identifying Joe the Wrecker, who is its hero, or the town where he lived and still lives. It's good enough to say that it is a New England city not so far distant from New York that a New Haven express couldn't make it on a good day, and that just about everybody in town knew Joe.

Chances are just about everybody still knows him, even though the years have passed and the town has grown and Joe isn't any longer the prominent sports figure he was. He isn't, as a matter of fact, prominent at all these days, but he's still a guy who would figure to catch your eye if you happened to pass him on the street.

In his younger days Joe the Wrecker was the best athlete in town, an Eastern version of Bronko Nagurski without college background. He was this tall with shoulders this wide, and his regular job was as lineman for the power company.

The way they tell it, any day Joe was on the job it was almost a scandal for the others in the crew to collect their pay, because all he needed was one guy to dig post holes for him. He'd stick the pole into the ground himself and kick dirt in around it to prop it up and then shinny up and haul the wires into place with his bare hands. That sort of guy.

Apprentice White Hope

Joe was doing a little boxing on the side and some fellows were training him up to be a "White Hope," which ought to date the story pretty accurately. This was perhaps a little earlier than the era John Lardner tells about when Jack Dempsey associated himself with a project for discovering a "White Hope" to take the heavyweight championship from Joe Louis. In his restaurant one



VIEWS OF SPORT
By Red Smith

For those of you who know relatively little of Mr. Smith, and perhaps have been wondering why we carry his column—"Views of Sports"—this information is for you. Smith, who writes his column six days a week for the New York Herald Tribune syndicate, is regarded as the finest sportswriter in the profession today.

He has been lauded in many national magazines, praised by novelist Ernest Hemingway, and his column displayed before Columbia University students as exemplary English. His opinions and philosophy are considered as an appropriate finish to sporting events. We hope you'll find him both entertaining and informative, as we have.

—The Editors—

day, Dempsey exhibited a drove of young fighters wolfin' sirloins on the house.

"The best lot of White Hopes ever collected," he said.

A visitor cocked an inquiring eyebrow in the direction of a Negro boy in the midst of the pack, and Jack fetched his guest a congratulatory whack on the shoulder.

"You got a good eye for fighters," he said. "He's the best prospect in the bunch."

Well, Joe the Wrecker was studying to be a White Hope, but he had time and muscle to spare which he employed in other sports. He was the biggest and toughest and rough-

(Continued on page 80)



The doors that serve the biggest service market!

The cars that drive through doors like these represent the largest ready-made service market in the automotive industry. The figures that back up this statement are staggering. There are nearly 16 million Chevrolet cars and trucks on America's roads. That's almost 3 million more than any other make. Or, to look at it another way, one out of four cars and trucks is a Chevy. And this big

market grows even bigger with every new Chevrolet owner!

Chevrolet dealers serve the industry's biggest service market with trained manpower, with up-to-date facilities and equipment—and with the sense of pride and responsibility that comes from knowing they're No. 1. **The busiest doors in the business lead to Chevrolet dealerships!**

Chevrolet Division of General Motors, Detroit 2, Michigan

CHEVROLET

mister jobber executive

SAFETY CHECK CAMPAIGN

... Through the cooperation of its nation-wide network of 3,200 wholesalers and 375 manufacturer members, NSPA is again endorsing and promoting the National Vehicle Safety-Check Program for communities which is taking place in May. The annual campaign is under the joint sponsorship of the Inter-Industry Highway Safety Committee, Look Magazine with the cooperation of the National Association of State Safety Coordinators.

NEW MEMA CREDIT MANAGER . . . Michael F. Delaney has become manager of the Association's Credit Department. He served MEMA over twenty-five years in various capacities, chiefly in the Credit Department of which he was assistant manager during the past three years. Delaney's appointment follows the advancement recently of Frederic J. Lanning from Credit Department manager to general manager of the Association.

DOUBLE-BARRELED FILM . . . A film aimed at two of the auto refinish industry's most critical problems — recruiting capable manpower and educating the public to insist on quality refinish work, has been released by Minnesota Mining and Manufacturing Co. The film is especially

aware of the fact that the car-owning public is being fooled by "low prices," forcing many sincere body men to sacrifice quality to meet competition. Called "Modern Metal Magic", the 16 mm color-sound presentation is in two parts. It can be shown separately or as a unit.

AUTOMOTIVE SERVICE INDUSTRY SHOW . . . NSPA, MEWA and MEMA have approved the holding of a jointly sponsored and operated national Automotive Service Industry Show in New York City, Feb. 10-14, 1960. The three Associations have taken this step because of many requests for a show, national and international in scope. All three will hold their 1960 national conventions in New York City immediately preceding the show.

PROFIT SHARING PLAN . . . Employees of H. M. Parker & Son, automotive parts and welding supply distributors have a total investment of \$77,780.55 in their company's profit sharing pension fund. So reports Norman Parker, the firm's president. All regular employees of H. M. Parker & Son who have completed two full calendar years of employment with the company are eligible for membership in this fund.

BRAKE SERVICE CLINICS

... On May 1 a national program of brake service meetings was launched by the Automotive Division of Wagner Electric Corp. Meetings are conducted in cooperation with jobbers throughout Wagner branch office territories. Hydraulic brake repair practices, proper application of brake lining, and fundamental brake information for all basic types of passenger car and truck brakes are included in the service meetings.

UNIQUE ANTI-FREEZE CAMPAIGN . . . Millions of motorists will literally be scared into draining the anti-freeze out of their cars this spring, if Peter Lorre has anything to say about it. The veteran film TV villain has been tied into a radio advertising campaign sponsored by Olin Mathieson Chemical Corporation. The campaign is designed to totally terrify those car owners who leave anti-freeze in their cars, year after year, in the mistaken belief that it is permanent or harmless.

40TH ANNIVERSARY . . . The Anderson Company of Gary, Indiana, manufacturers of the ANCO brand of windshield wiper products, celebrated its 40th Anniversary on March 1. John W. Anderson is firm's president.

Who's
Doing
How
Much . . . ?

Service Volume Surveyed ...New Trends Discovered



By Russ Case, Publisher
MOTOR AGE and
COMMERCIAL CAR
JOURNAL

*Condensed from a talk given before
the National Standard Parts Assn.
at the 1958 Los Angeles Convention*

HEAVY increase in population, a substantial number of people moving into higher income brackets, decentralization of industry and residential housing are all contributing to a startling change in our economy which became apparent immediately after the second World War.

In ten years 25 million people have been added to the country's population, and the number of cars and trucks has grown from 37 million in 1947 to 67 million in 1957, an 80 per cent gain in the number of vehicles on our highways.

All of this has produced tremendous changes in all types of retailing. The retailing of automotive service, along with all other types, has undergone deep-seated changes.

While the number of vehicles on the highway and the amount of travel have pyramidized, the number of each type of automotive retail outlet—car dealer, repair shop, and service station—has gradually decreased.

The sales volume of our industry was never greater, and the fact that automotive service patterns have changed drastically remains inescapable.

For these reasons, early in 1957, MOTOR AGE decided to know precisely where the market was—where the service work was being done, who was doing it, and in what volume. No complete data of this kind had ever been compiled before.

Here's how we did it.

First, we engaged National Analysts, one of the foremost research organizations in America, to make a nation-wide personal interview study of the market.

That study is now complete. It constitutes the first impartial, definitive analysis of the total industry's automotive service patterns ever conducted and its total results are now being released.

Since we did not set out to demonstrate a preconceived point of view, and in no way attempted to influence the findings, the study

is of significant value to the industry. It presents an entirely new insight into where automotive service work is done; who performs what services, who buys what equipment, where they buy, and in what volume.

Its purpose was to reveal over-all patterns of service work in the industry. Sufficient information was developed to mirror the undercurrents of change that we all were aware of, but no one had been able to define clearly. The study did not attempt to detail the quantity of the thousands of products produced by this industry for each classification of service, but rather the distribution of the service activity.

This is not the usual "conclusive" or "trends" study. Instead, it is a complete blueprint of where automotive service work is being performed.

Product information *is* in the study, but interpretation is needed to tie it to a specific product.

Thirteen major automotive service areas were decided upon as fairly well covering the service possibilities on an automobile.

These were . . . Lubrication, Cooling System, Brakes, Front-end, Steering Gear, Engine Tune-up, Starter, Generator and other electrical, Transmission, Clutch, Universal Joint, Differential, Engine, Painting and Body Work.

The goal of the study developed to be to determine those 39 per cent of the 300,000 automotive service outlets that perform 94 per cent of all the service work.

To evaluate the degree of service that each shop performed the interviewer determined whether the shop repaired, exchanged or replaced, or serviced a list of parts and assemblies within each of the 13 major service areas mentioned above.

By repairing was meant the complete overhauling of any automotive part or component and, as a corollary, it meant that the shop doing repair work had to have at least one or more skilled mechanics and enough equipment necessary to do the work.

By replacing or exchanging was meant the work required less mechanical skill and less service equipment than that required to repair.

By servicing was meant minor adjustments, and the checking or using of testing



equipment on any particular part or component.

The interviewer then checked the following things . . .

1. The type of work done most.
2. The equipment available for doing the work.
3. The amount of work other than automotive service done (marine engines, lawn mowers, farm machinery, truck fleet maintenance, off-the-road equipment).
4. The frequency with which each type of service work was performed.
5. The shop's annual dollar volume of service work.
6. The principal sources for shop equipment and for replacement parts and supplies.
7. The men who select brands of parts, accessories, supplies and equipment.
8. And finally, the most influential sources of supply for both parts and equipment among each type of retailer.

All of the service work in the country was divided into classifications by type of shop—general repair shops, specialty repair shops, service stations and new car dealers.

Answers From Management Only

Each interviewer was instructed to get his answers from the owner or manager of the establishment only. Twenty-three questions

(Continued on next page)



Survey Continued from page III

with 375 possible answers were devised to assure completely accurate results.

These trained field researchers spent approximately 45 minutes with each manager or owner, resulting a depth interview which couldn't possibly be obtained any other way.

The information this interviewing produced was gathered together on some 7,000 IBM cards, with an infinite variety of possible tabulations.

In order to provide you with some idea as to what this study contains, let's highspot some of the data obtained about service stations.

For years our industry has wondered what volume of service work is being performed by the service station, and which stations were doing a significant volume of service work, in addition to their gas, oil, TBA and car wash sales. We can tell you, as a result of this study, that the service stations are responsible for roughly just 9 per cent of all the automotive service work performed in this country.

Among the 181,000 gasoline service stations, there is a clearcut division between stations doing general repair work and those not performing repair work. Approximately 50,000 stations employ one or more full time mechanics, and are doing general repair work as defined in terms of brake, electrical and engine tune-up. Of these 50,000 stations, 18,000 employ two or more mechanics ranging up to stations employing nine or more full time mechanics.

Only these 50,000 stations employing full time mechanics—and by that we mean a mechanic working at least five days a week—are the stations that contribute 9 per cent

of the total automotive service work performed nationally by all new car dealers, general and specialty repair shops and gasoline service stations.

Furthermore, the capacity of service stations to perform major repair service varies considerably by size of service station, where the service station is located and in what city size area the station is found.

Nationally, the thirteen major areas of service performed by service stations rank as follows:

First, brake repair heads the list with 26.1 per cent of the 181,000 service stations doing it. Engine tune-up follows with 25.1 per cent of the stations performing this service, followed by starter, generator, electrical work 17.1 per cent, cooling system repairs 15.4 per cent, universal joint repairs 11.5 per cent, clutches 8.5 per cent, front-end work 6.6 per cent, transmission 6.5 per cent, differential repairs 5.8 per cent, steering 5.5 per cent, body and fender 2.8 per cent, and, last, as you would expect, engine 1.6 per cent.

How service stations are equipped provides an interesting pattern of selling opportunities. For example, 74 per cent are equipped with lubrication racks, 47.8 per cent have electric drills, 20 per cent are equipped with generator testers, 10.7 per cent have combustion analyzers, 9 per cent have spray guns, and only 1.2 per cent are equipped with brake drum lathes.

Twenty other pieces of shop equipment are also researched in this study, giving us a very adequate picture of how well the country's service stations are equipped to perform the repair services just mentioned.

This built-in cross-check, incidentally, between repair services offered, and equipment available to perform those services, casts significant light on whether each particular service is actually being done in the shop, or whether exchange services are being used.

NOTE: Next month Mr. Case concludes his two-part report on the Service Volume Survey. He will discuss which shops are performing related automotive services and the extent to which car dealers, repair shops, and service stations rely upon the automotive jobber as a source of supply for parts, accessories, and shop equipment.

Operation **J O B B E R**

Summer Months Hold Profitable Market for Jobbers

REIEVED now that the surprisingly severe winter has given way to a pleasant spring, many jobbers are warming up for the prosperous summer vacation months. Are you aware that the normal jobber earns nearly 35 per cent of his year's sales volume during the four months of May to August? It's not surprising. The jobber's earnings merely reflect the millions of restless Americans who rely on their automobile as a vacation convenience.

With these thoughts in mind, a new look at your business should include a thorough check-up on your seasonal selling programs, by lines, by months, and by salesmen. Even in 1958 when both real and psychological recession talk seems to fill the air, people are willing to spend money on their cars and hit the road just as soon as the school term ends.

From the Jobber Angle

The jobber must be ready for this exceptional seasonal selling opportunity. He must have more than normal stocks of those items most in demand during the summer months. His sales-

men must be fully acquainted with the long list of products that move faster and in greater quantities in the May-August period. Dealers, including service station operators who get a big share of the vacation-by-car service business, must be given special attention with more frequent calls, and prompt delivery of orders.

From the Dealer Angle

While it is never good practice to overload dealers in any season, a sound business promotion plan can be built around those products dealers should stock and sell during the summer season. When some 85 per cent of the country's vacationers show a preference to travel and see the U.S. in their car.

The summer selling plan can be designed with the car owner in mind. Most of all, he is interested in *performance, economy, safety, comfort* and pre-vacation service. To eliminate trouble and break downs is *all important*. Here then is a check list that should be a part of your seasonal selling program. It should interest retailers who stand to gain most from the ac-

celerated summer travel by car:

Performance: Motor tune-up, soldering equipment, fan belts, cooling system inspection, water pumps, sealants, head gaskets, rust inhibitors, summer thermostats, radiator pressure caps, radiator cleaner, radiator drain and reverse flush, motor cleaning compounds, radiator hose and clamps.

Safety: Brake shoes, brake linings, brake fluids, brake parts, brake inspection—adjustment, exhaust system inspection, shock absorbers—parts, safety seat belts, wheel bearings and oil seals, mufflers—tail pipes, wheel weights, speedometer check, tires, tubes, patching, lights: rear, front—inside and out, tubeless tire kits, windshield wipers—parts, lamp replacement units.

Economy: Ignition wiring sets, piston rings, fuses, wheel balancing, oil filter units—cartridges, tire rotation, carburetor parts—cleaners, wheel alignment, spark plugs—plug cable sets, ignition check, switches, generator inspection, batteries—parts, fuel pump service, distributor points, oil additives, cables, waterproofing spray, voltage regulators.

*signs
of the
times . . .*



This low slung 100,000 sq. ft. warehouse building resting on five acres of St. Louis ground now houses the entire factory warehouse operations of McQuay-Norris Manufacturing Company. McQuay-Norris formerly maintained warehouses in Indianapolis and Connersville, Ind., beside its St. Louis branch.

Wholesalers Need Not Feel Slump

"The present slump in our national economy need not adversely affect automotive wholesalers," J. S. Wiggins, executive vice pres. of NSPA, forcefully told the Virginia-Carolina Automotive Wholesalers Association recently at their annual spring meeting in Winston-Salem, N. C.

"Not if they accept it as a challenge to their ability as businessmen in a vital industry," he explained.

Wiggins said that a substantially increased market for products sold through independent wholesalers was already established. Furthermore, that production and sales had maintained a steady increase during past business slumps and depressions.



NATIONAL AUTOMOTIVE PARTS ASSN. has been conducting a series of business conferences. Shown here is the pyramid of services rendered for N.A.P.A. jobbers. Photo, taken on the stage of a Washington, D.C. hotel, shows Howard A. Bradley, Jr., Quaker City Motor Parts, Phila. (left) with Robert L. Stacey, N.A.P.A. executive.

Engstrom Dies

A. Schrader's Son, division of Scovill Manufacturing Co., Inc., has reported the death of Frank L. Engstrom, manager of industrial sales. Mr. Engstrom was in his 48th year with Schrader.

In the company report, Garvin A. Drew, general sales manager, credited Engstrom as chiefly responsible for the creation and development of Schrader's industrial sales department.

Allen Succumbs

Ted E. Allen, well-known manager of Armstrong Hydraulics, Inc., died recently in Chicago. He was active for more than 25 years in the automotive parts industry.

Mr. Allen is survived by his widow, Eva, and two married daughters.

MEWA Announces Contest Winners

Motor and Equipment Wholesalers Association selected three winners from the convention essay contest of its Young Executive Group. First place: Robert Bailey, Lewis Motor Mart Co., Dayton, Ohio; Second place: Victor Cilke, Fochtman Motor Co., Petosky, Mich.; Third place:



A recent midwestern sales conference of Wagner Electric Corporation, held in bustling Kansas City (above), turned up plans for a national program of educational brake-service clinics. Launched during the early days of May, the nation-wide sessions are designed to raise brake-service standards as well as increase the knowledge of repairmen.

Joseph Nathan, Abeles-Lewit, New York City.

The essay theme was "How Wholesalers Can Conduct an On-the-Job Training Program."

The three winners received U.S. Saving Bonds of \$100, \$50, and \$25 respectively. Bailey also attended MEWA's National Convention in Los Angeles.

Automotive Wholesalers' Sales and Inventories

Data from Bureau of the Census, Department of Commerce

Per Cent Change

Region	Sales			Inventories	
	Feb. 1958 from Feb. 1957	Feb. 1958 from Jan. 1958	2 Mos. 1958 from 2 Mos. 1957	Feb. 1958 from Feb. 1957	Feb. 1958 from Jan. 1958
New England	- 3	- 12	- 15	- 3	- 4
Middle Atlantic	+ 1	- 7	+ 7	- 5	0
East North Central	+ 6	- 3	+ 2	+ 4	+ 1
West North Central	0	- 1	- 2	+ 3	- 1
South Atlantic	+ 7	- 5	- 1	+ 3	+ 2
East South Central	+ 4	+ 3	+ 3	+ 4	0
West South Central	- 9	- 15	- 2	0	+ 6
Mountain	- 19	- 15	- 7	- 9	0
Pacific		- 7	...		
United States	+ 9	- 7	+ 9	+ 3	0

Indicators of Business Activity

These figures are based on latest thirty-day reports

	Latest Data	Month Before	Year Ago	Percentage Change from Month Ago	Percentage Change from Year Ago
PRODUCTION					
Motor Vehicles (Units)	430,095	466,141	669,833	- 7.7	- 35.8
Industrial—F. R. B. 1947-'49 = 100 (Adj.)	130	133	146	- 3.7	- 11.0
SALES					
New Cars	440,000	333,580	572,917	+ 31.9	- 23.2
Replacement Tires (Units)	4,374,371	5,511,314	5,051,465	- 20.6	- 13.4
Manufacturers (\$ Millions)					
Durable Goods	\$11,990	\$12,646	\$14,808	- 5.2	- 19.0
Non-durable Goods	\$13,603	\$13,704	\$14,726	- 0.7	- 7.6
Department Stores, 1947-'49 = 100	126	131	136	- 3.8	- 7.4
GENERAL					
Consumers' Price Index, 1947-'49 = 100	122.5	122.3	118.7	+ 0.2	+ 3.2
Civilian Employment	62,311,000	61,988,000	63,865,000	+ 0.5	- 2.4
Unemployment	5,198,000	5,173,000	2,882,000	+ 0.5	+ 80.4

Motor Age's Who's Who



William W. Roche has been elected to the board of directors of Binks Manufacturing Company. The election of

Roche fills the vacancy created by the death of Joseph D. Linehan early this year.

John F. Creamer, Jr., has been elected a vice president of Wheels Incorporated to fill the vacancy caused by the death of Edward H. Regan.

Arthur J. Welch has been appointed vice president and general manager of the Spring Division of Borg-Warner Corporation.



Merton A. Carlson, photo, was elected president of the Precision Automotive Components Company. He succeeds

Herbert M. Ramel who was made chairman of the board.

Bob Copeland has been appointed assistant district manager in Fla. for Standard Motor Products, Inc. Other new assistant managers are: **Charlie Pattison**, working in Ala. and Ga. **Charlie Runser**, assisting in So. Miss. and Louisiana.



Samuel G. Rae has been appointed manager of Automotive Sales of Owens-Corning Fiberglass Corporation. He recently had been assigned to the Detroit branch office, as a specialist in automotive sales.

William C. Lee has been appointed to the new position of director of distribution and marketing for AC Spark Plug Division's replacement sales. **James W. Grimm** succeeds Lee as eastern sales manager. **Howard R. Jones** will become the new regional manager in Phila.

Dale Smith has been named to represent the automotive division of Ace Rubber Products, Inc. in the Rocky Mountain district.



Donald H. Teetor, left, and **William B. Prosser**, chairman of the board and president, respectively, of Perfect Circle Corp. have been elected to the board of Aluminum Industries, Inc.



William H. Shinn, left, has been appointed assistant to the president of Gunite Foundries Corp. **Thomas D. Schmidt** has been made sales manager of Distributor Products for the company.

Edward H. Eaton has been elected treasurer of Pittsburgh Plate Glass Company.

John M. Welch has been appointed director of field sales for Olin Aluminum, a division of Olin Mathieson Chemical Corporation.

Edward T. Michalek has been promoted to assistant sales manager of the SpeedWay Division of Thor Power Tool Company of Chicago. He will coordinate expanded sales activities as an assistant to J. B. Dempsey, vice president of the SpeedWay Division of Thor.



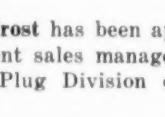
Donald V. Watson has been appointed as sales engineer and will be with the Chicago district office of the Formsprag Company, Warren, Michigan.

Bernard F. Nachtman has been named manager of the Chicago district office for Commercial Solvents Corporation.



Harry E. Gude, photo, has been appointed vice president for manufacturing of the Aluminum Division of Olin Mathieson Chemical Corporation. He succeeds **Albert J. Berdis** who will become president of the Weirton Steel Company.

Robert F. Kehrer has been appointed industrial parts manager of the J. I. Case Company, Racine, Wisconsin.



O. Franklin Frost has been appointed equipment sales manager for AC Spark Plug Division of General Motors.



Phillip Hall has been appointed manager of Industrial Sales of A. Schrader's Son Division of Scovill Manufacturing Co., Inc. His headquarters will be in Schrader's main offices in Brooklyn, N. Y.

MOTOR AGE

newscoop

*Auto Price Labelling
Retractables vs. Rag Tops
Straight Stick Departs
Ford's "Operation X"
Speculation On Small Cars
Can Car Prices Be Cut?*

In the days ahead.... HERE'S WHAT TO LOOK FOR!!!

Backing For Auto Price Labelling

WIDESPREAD BACKING IS CLAIMED for auto price labelling bill.... Requiring factories to use windshield stickers showing suggested retail price of each car.

Sen. Monroney, D., Okla., bill's author, opened hearings on it late in April.... NADA presented witnesses giving association's approval of principal aspects of bill.... AAA and Better Business Bureau blessed it.... Then came Ford and GM approval.

Chrysler: "We find ourselves neither opposed to the bill nor in support of it.".... Added, if majority of authorized new car dealers found such a law would provide best means of accomplishing aims, no objections.

Prices Snipped

FORD DIVISION HAS REJUGGLED ENGINES on some models to make two of its car models more competitive with Chevrolet. . . . At same time, it increased price of Cruise-O-Matic transmission by \$11.60 to \$209. . . . Which is still under Chevrolet's Turboglide transmission and Plymouth's Torqueflite.

This move enabled division to reduce prices on Fairlane V-8 and Fairlane 500 V-8 models. . . . Prices on Fairlane V-8 sedans trimmed by \$16.18, while Fairlane 500 V-8 sedans and hardtops were reduced by \$17.27.

Speed Control Adopted

A SAFETY SPEED CONTROL DEVICE, similar to Chrysler's Auto-Pilot, will be offered on at least two 1959 GM cars. . . . It'll be simple linkage unit called "Cruise Control."

Retractable To Replace Rag Top

RAG TOP CONVERTIBLES on way out. . . . Predicts GM official. . . . Says these will be replaced by retractable steel hardtops such as Ford's Skyliner. . . . Companies experimenting with steel top convertibles. . . . Matter of two or three years when they will become universal, he states.

"Let The Lower Lights Be Burning"

CAR COMPANIES HAVE SHAPED up interesting headlamp arrangements for next year. . . . May see headlamps mounted low in grilles. . . . Reminiscent of Nash and Hudson cars, and more in "V" fashion similar to current Lincoln.

Chevrolet has lowered its horizontal duals about seven inches. . . . Just one inch above legal minimum heights. . . . Suggests that lights will be horizontally adjacent to grille. . . . In another 1959 design, parking lights are located between each of the horizontal duals. . . . Giving appearance of "triple" headlamps.

Are Dealers Abusing Factory Warranty?

HOW MANY DEALERS ARE ABUSING factory warranty policies? . . . According to one factory official, number is "negligible."

This official counts 500 offenders who habitually "pad" claims to factory. . . . Represents less than 5 per cent of company's total dealer body, which has been about par for industry for many years, he says. . . . It includes both small and large established dealers.

Plymouth Doing About Face

PLYMOUTH DIVISION HAS PUT BRAKE on its exclusive dealer program. . . . Since plan was launched in 1956, division has signed up 208 individual Plymouth dealerships in key areas around country.

The division reportedly is now doing about-face. . . . Some exclusive Plymouth dealers being dualed with other Chrysler Corp. lines. They are finding it difficult to support their operations with a single line car.

Straight Stick Departs

ONE OF BIG THREE CAR COMPANIES may eliminate manual transmissions altogether by 1960. . . . Company has ready a semi-automatic transmission. . . . Priced just above standard "straight stick" unit.

It's a combination planetary gear-torque converter unit incorporating a simplified valving mechanism. . . . Selector quadrant provides low and high gear for manual operations. . . . Fully-automatic comes into play by leaving selector in "high" range.

More Interchangeability

TO REDUCE MANUFACTURING COSTS, General Motors planning still more interchangeability of various parts and accessories among divisions in 1959. . . . Example: use of one basic heater and air conditioner for all five car lines. . . . Heaters, will be offered in both standard and deluxe models as currently.

Also talk about one basic air suspension system for all cars. . . . Each GM division now uses own design air bags, heaters and air conditioners, a costly operation from a manufacturing standpoint.

Something In The Making?

AUTOMOBILE COMPANIES have always guarded their secret projects zealously. . . . There's a small white-painted building at Ford styling center in Dearborn where security is being doubly emphasized. . . .

Project inside known as "Operation X." Will Operation X give birth to something new soon, as did Ford's former Special Products divisions, which were responsible for Continental and Edsel cars?

Wagons To Get New Gate

CHEVROLET NEXT YEAR will join several other makers in doing away with old lift gate on station wagons. . . . In its place will be a sliding window which rolls down into tail gate. . . . On higher-priced wagons, window will be electrically-powered. . . . Manual on lower-priced jobs.

Higher-priced Nomad station wagon line will include a nine-passenger model with a rear-facing seat. . . . Mid-priced Brookwood wagon will be dropped.

Old Predictions Coming True?

TALK AND SPECULATION about small cars continuing to be one of major subjects around Detroit. . . . Interesting to reflect upon forecast made more than 15 years ago by a GM vice president. . . .

"Success of one manufacturer with a small car will create a scramble for the market by virtually all factories," he said. "There's a possibility that one might make good."

Catch A Salesman

ALMOST UNANIMOUS ADMISSION by many dealers that they have lacked aggressive sales efforts is supported by recent unpublicized study made by M-E-L Division.

1000 residents were interviewed by M-E-L in a large city. . . . 99 per cent of them said they had never been approached by a car salesman. Joshed one new-car prospect: "I'd buy a car, but I haven't been able to catch a salesman."

No Import Tax on Foreign Show Cars

FOREIGN CARS, AUTO PARTS can be brought into U.S. without import tax If they're to stay here briefly and to be shown, not sold.

New law (Public Law 379, 85th Congress) allows free import of cars, parts.... These must be shipped out again six months after entry.... Law covers items from countries giving same privileges to U.S. products.

Superroads Bar Service Stations

BAN AGAINST SERVICE STATIONS on interstate superroads will stick.... For a time, anyhow.... Bureau of Public Roads proposes no change in law barring stations from rights-of-way on interstate system.

Spotlight on D. C. Car Dealers

FEDERAL GRAND JURY EXAMINES dealers' prices on new cars.... To find if Washington, D.C., area retailers get together to fix prices.... If dealers' groups do so, they could be indicted for violating Sherman Antitrust Act.

Special attention is given Ford, Chevrolet, Chrysler groups in and around Washington.... Justice Dept. has not subpoenaed NADA for grand jury testimony.

No Inquiry Of GM Seen

DON'T EXPECT NEW JUSTICE DEPT. study of GM factory prices.... Although Sen. Kefauver, D., Tenn., suggests antitrust inquiry aimed at GM.... It would go along with grand jury probe of Washington dealers' prices.

Likely answer from Justice Dept: Activities of all automakers are under continuing study.... There'll be action if antitrust laws are broken.

Tax Exemption On Driver-Training Cars

NEW BILL IN HOUSE APPLIES to driver-training cars.... Rep. Ikard, D., Tex., offers H. R. 11780, to leave manufacturers' excise tax off cars the dealers lend free to schools for training.

Tax exemption of this type is favored by NADA (MOTOR AGE, March, page 36). Bill is sent to group handling tax-cut measures in House, the Ways and Means Committee.

Upswing In Robberies

KEEP AN EYE ON YOUR CASH DRAWER.... More hoodlums are on the prowl as joblessness spreads.... Many are amateurs, after cash only.... They'll try daytime robberies and holdups, federal law officers warn.

There's an upswing, too, in other efforts to cheat the businessman.... Shoplifting, bad check passing, dishonest buying are on the increase.

Can Car Prices Be Cut?

ONLY ONE FAIR USE FOR SAVINGS if auto excise taxes are dropped.... Pass savings along to buyers.... Advises powerful Republican leader, Sen. Bridges, R., N.H..... Don't repeal taxes just to give UAW members a raise, he pleads.

He urges labor, auto management to look for ways to cut prices of new cars.... And overcome lagging consumer interest in them.

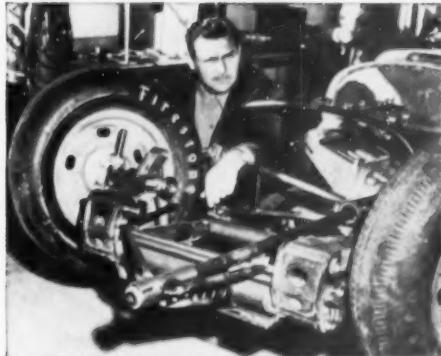
Government Spurs Roadbuilding

ROADBUILIDING LAW JUST ENACTED will show some results by end of summer.... Not in actual new paving.... But in contracts made possible by money now ready for highway use.

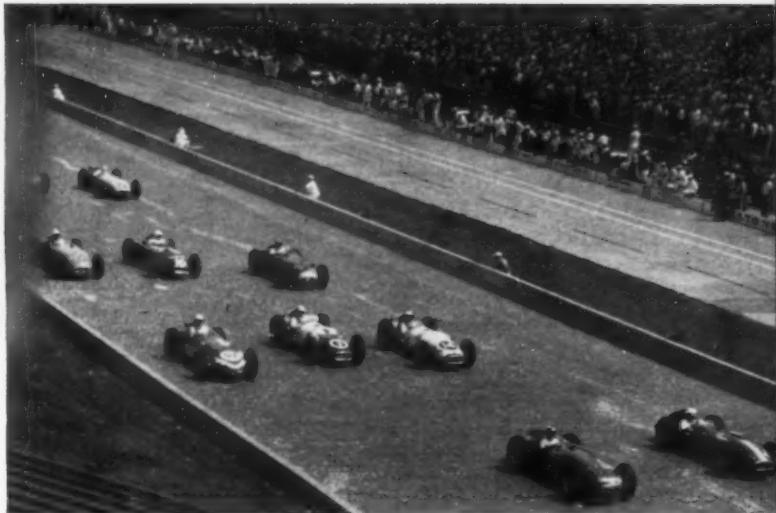
Some contract work may be near you.... If you're located on or near a secondary highway.... Government funds of \$400 million have just been allotted to states for these roads.

Indianapolis Preview

New developments give promise of a GREAT RACE



Above: Frank Kurtis shown with new "no front axle" racing car.



Right: Drivers jockey for position at start of '57's "500".

WHAT'S ahead for this year's Indianapolis "500"? What should you look for in mechanical and chassis changes in the racing cars? The Belond Exhaust Special, for example, which Sam Hanks drove to a record breaking 135.601 mph victory in last year's 500-mile race apparently has set a precedent for at least four of the new cars being readied for the 1958 Classic.

The Belond car, to be piloted this year by three-time national champion Jimmy Bryan, was one of the most radically designed machines at the Speedway a year ago. Its four-cylinder, Meyer-Drake power plant is installed at an unorthodox "lay-over" angle. Only eighteen degrees from a perfectly

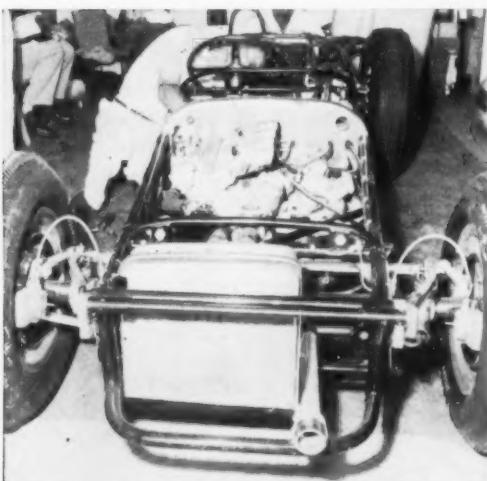
By ROBERT RUSSO

horizontal position. This gives the entire car an extremely low silhouette and center of gravity. It cuts considerable frontal area for minimum wind resistance on the long straightaways.

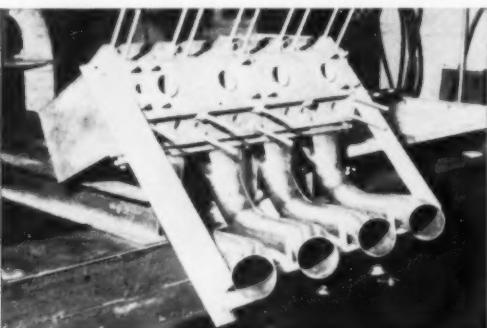
Despite the strong skepticism which greeted owner-mechanic George Salih when he unveiled his new creation last May, the car performed exceptionally well as evidenced by Hanks' record breaking win. Throughout the 500-mile grind, Sam was able to pick off his competitors almost at will. He had a car with outstanding cornering. (*Continued on next page*)

Great Race Promised . .

Continued from preceding page

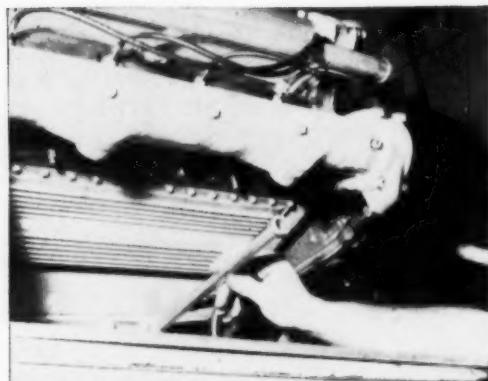


New D-A Lubricant car with its trailing arm suspension and one of several new lay-over engines.



Fabricating exhaust headers for the lay-over engine prepared for the Epperly-built car.

Sonny Meyer displays new elbow-type injector which will be installed in the lay-over engine.



Adequate oil drainage for the cam housing is provided by installing special cam tubes.

ing characteristics and plenty of steam on the chutes. Before the race ended, the skeptics were convinced that an engine will run in a lay-over position.

As mentioned, four of the new cars built for the 1958 race have adopted the lay-over engine. Although developed successfully by Salih, it is reportedly now available from the Meyer-Drake factory. With all necessary modifications to overcome the many problems of laying an engine on its side.

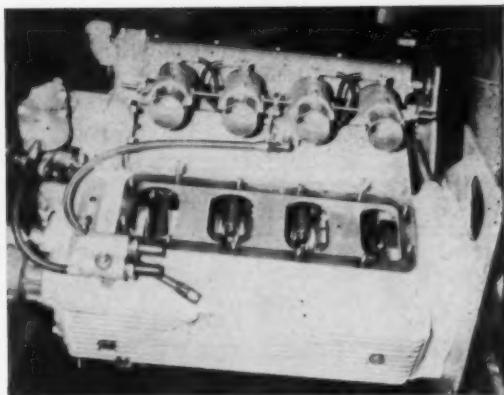
The main item, of course, was the problem of lubrication. Being a dry sump engine, the Meyer-Drake Offy contains the bulk of its oil supply in a separate tank located either in the cockpit or hanging just outside the cockpit area. By twisting the engine to an almost flat angle, the side of the crankcase becomes the bottom. The bottom becomes the side. Salih solved the problem by fabricating a bolt-on-type sump which is fitted into the area normally occupied by the crankcase side-plate cover.

But this still left the problem of draining the lower cam housing. In this type of installation it is placed in a horizontal position, incapable of scavenging the oil back into the sump in the normal manner. Last year, Salih used two flex hoses attached to fittings drilled into the underside of the cam housing and running back to the sump for drainage. In the Meyer-Drake modification, the flex hoses have been replaced by $\frac{5}{8}$ inch tubing to resist the heat of the exhaust headers.

The headers themselves, which curve out from the underside of the engine, were



A view of the one-piece tail and tank assembly installed on the new car built by Eddie Kuzma.



View of the lay-over engine with crankcase cover off for access to connecting rods.

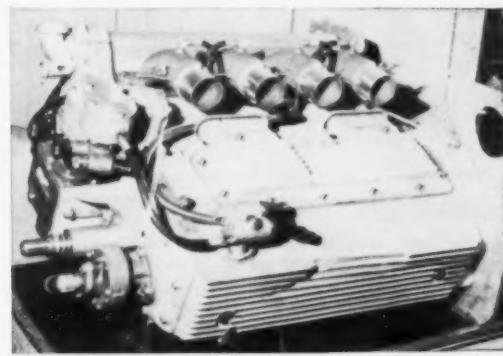


Who Will Cop the Motor Age Trophy at Indianapolis?

Again this year, Motor Age will inscribe the name of the driver posting the fastest qualifying lap at Indianapolis Speedway on the tall, handsome silver Motor Age trophy.

The winning driver, his mechanic, and the car's owner each will receive a gold watch from Motor Age. Above scene is from last year's presentation. Then Motor Age editor Frank P. Tighe (left) handed trophy to Paul Russo who posted a top qualifying lap at 145.255 mph.

Russo, mechanic Gene Marcenac, and Novi Air Conditioner Special car owner Lew Welch then were awarded gold watches.



Engine, now completed, will rest in chassis in this position. Note elbow-type fuel injectors.

ports which normally protrude straight out about six inches could not be used in the lay-over installation. (They would have protruded through the top of the cowl, thus spoiling the frontal area of the car.) To supplement this, a special set of injectors with elbow ports were cast. These are being used on the lay-over engines now available from Meyer-Drake.

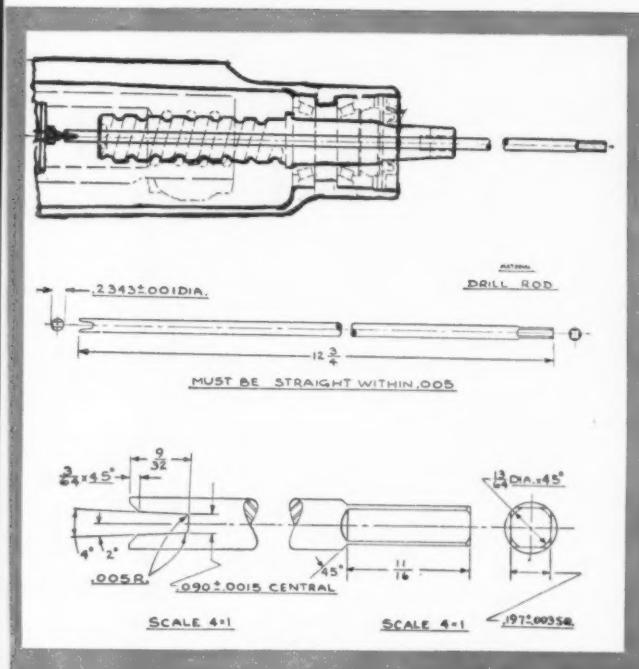
Of the new cars employing the lay-over engine set up, the new D-A Lubricant Special to be driven by Johnny Thomson is among the most interesting. Built by Frank Kurtis, the car uses a trailing-arm type independent front suspension. This is entirely new in comparison to the A-arm independent suspension used in former years at the Speedway.

Kurtis' idea in building the car, which weighs approximately seventy-five pounds more than the conventional Indianapolis

(Continued on page 106)

responsible for the 18 degree angle of the engine. Salih, in preparing his set up last year, originally had intended to lay the engine perfectly flat. Lack of room for the headers, however, prevented this.

One other major change was necessary. That was to the fuel injectors. The four



Above, top: special tool inserted into worm shaft to adjust control valve. Lower: make tool out of drill rod according to specs listed.

KNOW YOUR power steering

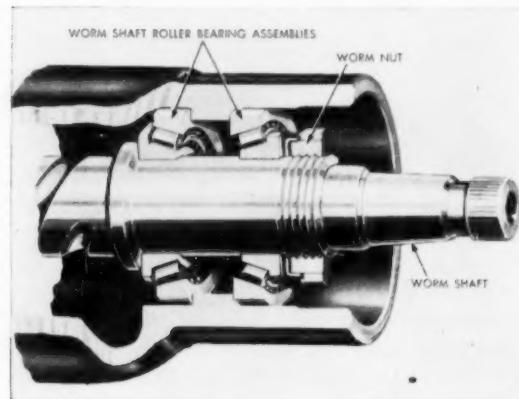


Timely tips on making adjustments on power steering units

WHEN the new models emerge each year from their Detroit birthplace, the number of cars equipped with power steering is always higher. This popular option is definitely here to stay. It is a proven member of the family of power options. Almost a twin in popularity to "big brother" automatic transmission.

Long gone are the days when the mechanic or serviceman would regard it a rarity to come across a power steering unit on a customer's car. To the extensive file of MOTOR AGE articles already written on power steering comes one more: A ROUND-UP of ADJUSTMENTS and procedural tips for popular makes of power steering.

Cutaway of thrust bearings on Chrysler co-axial unit.



When called upon to service Bendix linkage power steering units, here is the procedure for the Pitman shaft adjustment (Packard cars):

Put steering wheel at midpoint or straight-ahead position. Turn the wheel a quarter turn from this point and using the spring scale pull the wheel through the high spot. The pull required should not be greater than 12 ounces. If the pull is greater, or less, than 12 ounces the Pitman shaft should be adjusted.

Turning the Pitman shaft adjusting screw in will increase the scale reading; turning it out will lower it. Adjust the shaft so that the scale will read 12 ounces. Note: Do not attempt to adjust the Pitman shaft until the steering gear alignment and the worm bearing adjustment have been checked and adjusted.

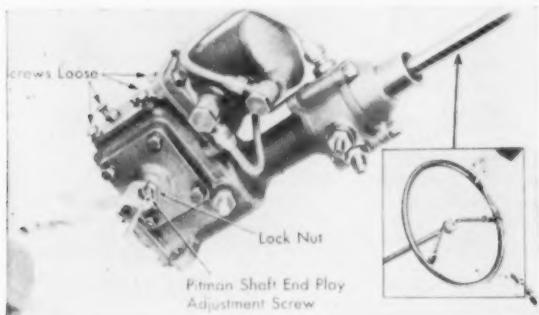
Worm Bearing Adjustment

Disconnect the control valve assembly from the Pitman arm. Turn the steering wheel to the right or the left stop and then back from either stop one-eighth of a turn. This assures that the worm and roller are not on the high spot. Attach a spring scale to the outer edge of the steering wheel and use the scale to turn the wheel. The scale should not show less than one ounce nor more than 8 ounces pull.

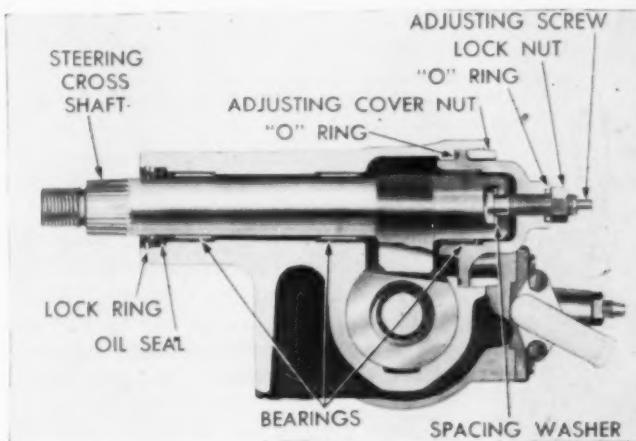
If the pull to turn the wheel is less than one ounce, loosen the four worm cover attaching screws and back them out approximately one-eighth of an inch.

Move the cover out on the screws and separate the shims. Remove the thinnest shim. Be careful not to damage the others.

Adjusting Pitman arm shaft play on Saginaw unit.



Tighten the cover attaching screws to 15-18 ft. lbs. If now the pull shown on the scale to turn the wheel is still less than one ounce remove another shim. If the pull is greater

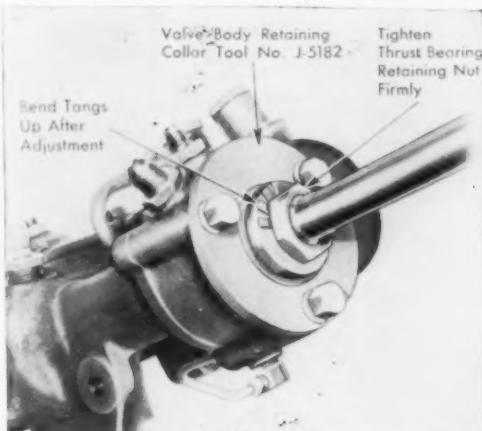


View of cross-shaft adjuster on Chrysler steering.

than eight ounces, remove the cover and add a .003 in. shim. Replace the cover and recheck the pull. If the worm cover plate is not in good condition replace it with a new plate. When the worm bearing has thus been prop-

(Continued on next page)

Steering shaft adjustment location on Saginaw.



Power Steering Adjustments . .

Continued from page 41

erly adjusted the Pitman arm shaft can be adjusted.

Spool Valve Adjustment, Monroe Linkage Unit

The spool valve adjustment plug which is at the left end of the power cylinder can be turned in or out, depending upon the action of the cylinder. The plug should be turned one-sixth of a turn at a time and the car road tested after each adjustment.

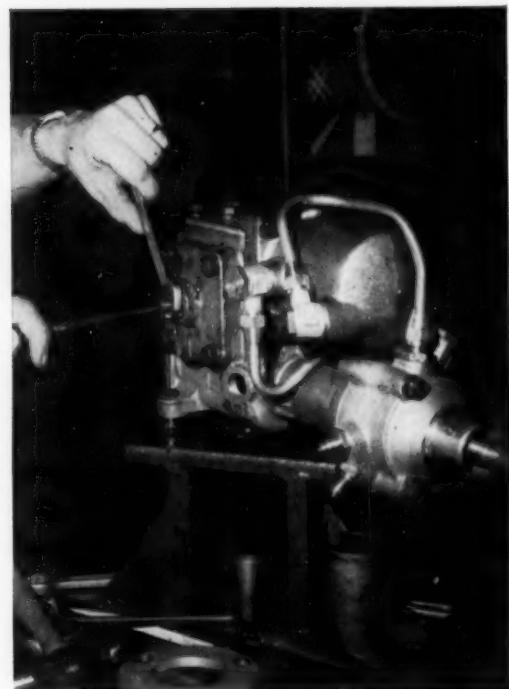
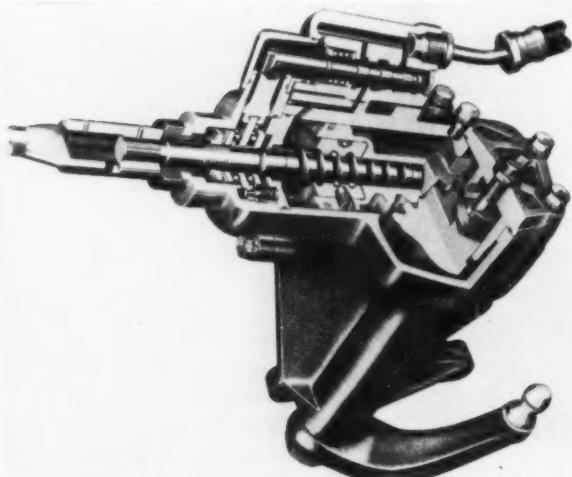
When to Turn Plug in:

Turn the plug in: when a left turn is too hard and a right turn is too easy; when there is poor recovery after right turns and good recovery after left turns; when the car wanders to the right.

Turn the plug out: when a right turn is too hard and left turn is too easy; when there is poor recovery after left turns and good recovery after right turns; when the car wanders to the left.

After the correct adjustment has been ob-

Cutaway view of Saginaw "In Line" power steering.



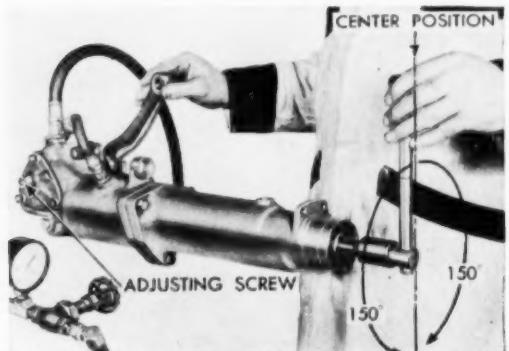
Above: Adjusting cross shaft on a Saginaw unit.

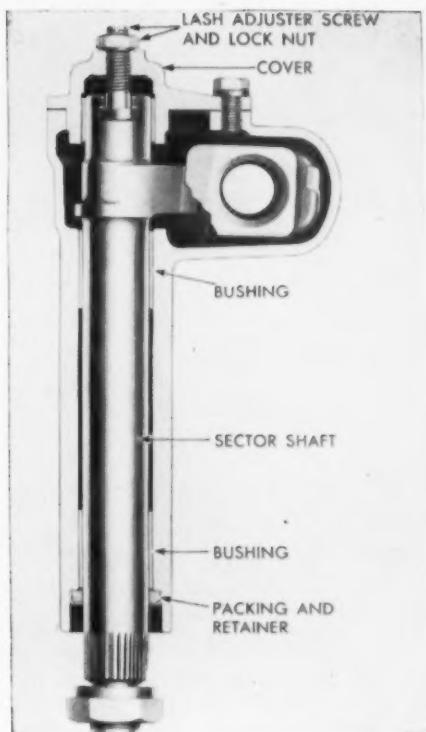
tained, install the cotter pin to lock the plug in position.

Steering Gear Adjustment and Adjustment Check on Plymouth and Dodge

Misalignment of the steering column gear can cause a bind in the gear that will not

Backlash checked between steering shaft & Pitman arm.





Viewing cross shaft adjuster. Bushings and seals should be checked carefully for wear.

allow the power steering system to operate properly.

Correct the column misalignment by adjusting the brackets at the instrument panel and at the frame bracket. Adjust the steering gear worm shaft bearings and the cross shaft backlash (with the power unit detached) to the minimum limits, that is, a $\frac{3}{8}$ -pound pull on the steering wheel for the worm shaft bearing adjustment, and 1-pound pull for the cross shaft backlash adjustment.

Spur Gear Adjustment on Cars Using the Gemmer Unit

With the engine shut off turn the steering wheel slightly. If there is too much play (lash) the valve block must be adjusted which is to say that the lash must be reduced. Pull the steering wheel up until there is $\frac{1}{8}$ -inch clearance between the hub of the wheel and the collar of the column.

Working under the hood at the power unit,

use an open end wrench to loosen the bolt which holds the adjusting plate. The adjusting plate is splined to the end of the adjusting pin. Move the plate in a clockwise direction to turn the adjusting pin so that the steering wheel is held in the up position. Tighten the plate lock bolt just enough so that the plate does not move of its own accord. Now turn the adjusting plate counter-clockwise until the steering wheel snaps down. At exactly this point tighten the lock bolt to hold the plate securely in position.

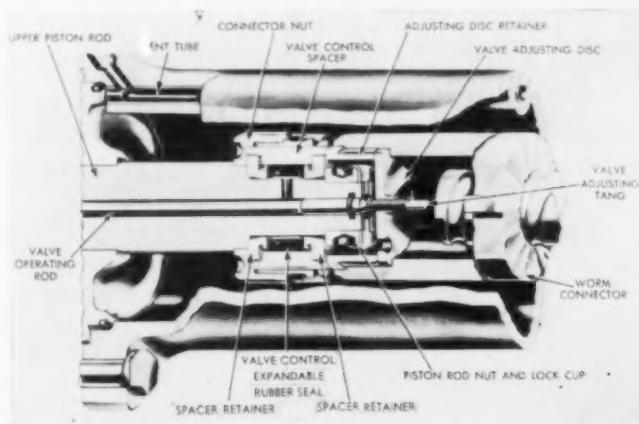
If the plate cannot be moved far enough clockwise to hold the wheel in the housing, slip the plate off and reinstall it at another position. If the pin is not held while this is being done it may move outward with the plate and in doing so come out of its seal which will require disassembly of the power unit to get it back in place.

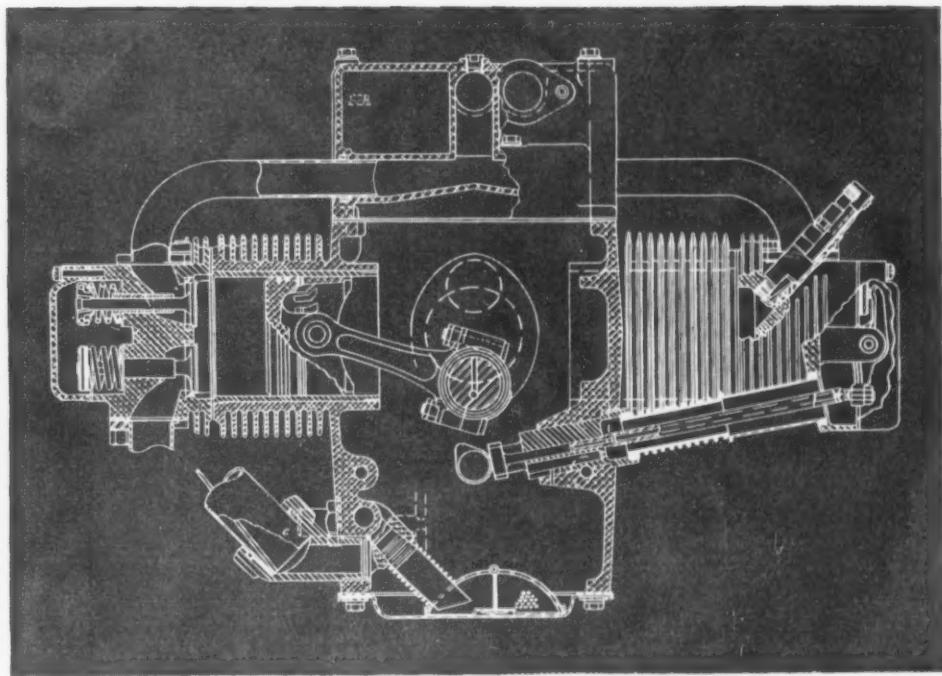
After locking the adjusting plate securely, check the wheel. It should be able to be lifted and dropped the $\frac{1}{8}$ th in. at several points of a complete revolution. The adjustment should only be free enough to allow the wheel to drop into position at the tightest meshing position of the spur gears.

Saginaw Unit Adjustments

Overcenter adjustment is made in this manner: *(Continued on page 89)*

Below is shown a cutaway of the hydraulic reaction chamber on Chryslers' Co-Axial steering.





ENGINE'S TRANSVERSE CROSS-SECTION VIEW.

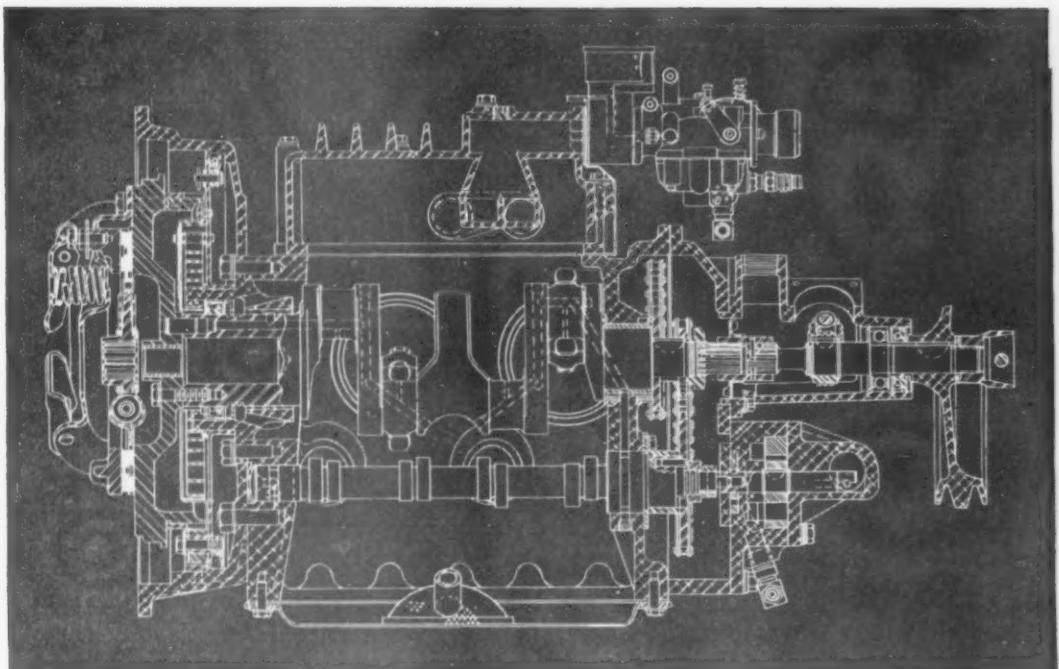
Big kick in **WILLYS 'Mechanical Mule'**

This 25 horsepower engine boasts four horizontally-opposed pistons. All its castings are of aluminum

DURING this period of flux in engine design, it is of interest to take a closer look at the small Willys engine which is installed in the Mechanical Mule. With maximum rating of around 25-hp, this engine has four horizontally-opposed pistons, is air-cooled, features aluminum castings for the entire structure.

To better visualize design details, we have reproduced two principal cross-sections—one transverse, the other longitudinal. The cylinder block is integral with the crankcase and has integral finned cylinder barrels as well.

Getting further into details, Willys employs cast iron liners for the cylinder barrels.



ENGINE'S LONGITUDINAL CROSS-SECTION VIEW.

By JOSEPH GESCHELIN, Engineering Editor

Pistons are Bohn Aluminum, of trunk type, weighing 0.515 lb., and fitted with three rings—two compression rings, one oil control ring.

Referring to the longitudinal sections, it will be noted that such items as the flywheel housing, and fan pulley all are of aluminum. The camshaft is chain-driven and mounted on two, cast-in bearings. The hardened crankshaft is of counterweighted type, mounted in two main bearings fitted with copper-lead bearing inserts.

Lubrication is full pressure feed to all main, con rod and camshaft bearings as well as to the rocker shaft and tappets. The oil pump is an Eaton rotor type assembly,

mounted at the front end of the camshaft. An Air Maze oil filter is supplied, mounted to the oil pump. An oil bath air cleaner is used.

It is mounted to the vehicle rear bed support, has an oil capacity of $\frac{1}{4}$ -qt. The engine uses an SAE 1/2-0.812 Tillotson carburetor, mounted horizontally at the top front of the engine.

The fuel pump is of diaphragm type, supplied by AC, located on the right hand side of the engine. The fuel line is protected by means of an AC sediment bowl-type filter ahead of the carburetor; and Skinner Purifiers sediment-type filters located in the fuel tank.

Since this air-cooled engine is rear mounted with the front face facing the rear, adequate provision must be made for air cooling. To this end, Willys employs a large diameter blower with a 5-blade impeller 6.50 in. in diameter, mounted at the front face and driven by belt. Carburetor air is drawn from

(Continued on page 113)



Oldsmobile's Trans-Portable radio can be your constant companion whether ice fishing, Sunday driving or lounging on a Florida beach. Radio was developed by Delco Radio Div of GM and Olds engineers.

HUMAN EVENTS



Last minute adjustments are made on go-kart by Dr. Ken Waterhouse of Covina, Calif. His 10-year-old son, Kip, is driving it in race between youngsters on the Covina track.



New way to plead "Help Stop Death on the Highway" is pointed out by pretty Rita Carlisle, an unofficial traffic stopper. She shows a National Safety Council imprint on shipping boxes for an auto floor-covers' manufacturer.



This can run into money! Despite appearances, the driver of this car is not a customer of this drive-in bank. Car crashed through bank window after a traffic accident on street outside.



Driver of this car was a little upset when he tried to stop to pay his toll and started to skid. Car hit a concrete abutment and flipped over coming to an upside down stop. Motorist emerged with only a cut lip. Question: Did he pay the toll?



Basic education

TROUBLE SHOOTING

Mechanics of all ages will find this article helpful as a guide to determine the proper steps to take after customer reports trouble

Customer Reports

Poor fuel economy

Mechanic Knows:

- a. Bad driving habits
- b. Automatic choke operates improperly
- c. Manifold heat valve stuck
- d. Leaks in fuel line fittings
- e. Dirty or restricted air cleaner
- f. High fuel pump pressure
- g. Leaks in vacuum passages
- h. Dirt in jets & passages
- i. Power piston worn
- j. Actuating spring distorted
- k. Defective needle & seat

Surging condition after short stop with hot engine

Mechanic Knows:

- a. Weak fuel pump
- b. Seat tight in casting
- c. Faulty float needle
- d. Float leaking
- e. Float in collapsed condition
- f. Improper float adjustment
- g. Dirty jets & fuel passages
- h. Damaged main well tubes

Flat spot or poor acceleration

Mechanic Knows:

- a. Manifold heat valve is stuck
- b. Thermostat improperly installed
- c. Pump leather is hard and distorted
- d. Inlet & outlet valves leaking
- e. Improper seating of plunger vent ball
- f. Dirt in pump discharge holes

Brake pedal goes to toe board

Mechanic Knows:

- a. Normal wear of lining
- b. Low fluid level in master cyl.
- c. External leak in hydraulic system
- d. Leak past master cyl. primary piston cup
- e. Air trapped in hydraulic system
- represents most common solutions



Customer Reports

One wheel drags

Mechanic Knows:

- a. Improperly adjusted parking brake cables (rear wheels)
- b. Weak brake shoe return springs
- c. Brake shoe or drum clearance too small
- d. Loose or incorrect front wheel bearings
- e. Wheel cylinder piston cups swollen or distorted
- f. Piston stuck
- g. Obstruction in line
- h. Support assembly shoe edge grooved

Car pulls to one side

Mechanic Knows:

- a. Grease or fluid on lining
- b. Anchor pin adjustment incorrect
- c. Loose wheel bearings
- d. Loose backing plate at rear or front axle
- e. Linings not to specifications
- f. Primary & secondary shoes reversed
- g. New & used linings mixed on one end of car
- h. Tires not properly inflated
- i. Unequal wear of treads
- j. Different tread (non-skid)
- k. Linings charred
- l. Drum scored
- m. Water, mud, etc., in brakes
- n. Loose steering
- o. Unequal camber

Transmission slips out of low or reverse

Mechanic Knows:

- a. Gears damaged from operating at part engagement
- b. Improperly mated splines on inside of gears
- c. Improperly adjusted linkage

Transmission noisy in all gears

Mechanic Knows:

- a. Insufficient lubricant
- b. Worn counter gear bearings
- c. Worn or damaged main drive (clutch) gear & countershaft drive gears
- d. Damaged main drive (clutch) gear or mainshaft ball bearings
- e. Damaged speedometer gears

Transmission leaks lubricant

Mechanic Knows:

- a. Excessive lubricant in transmission
- b. Loose main drive (clutch) gear bearing retainer
- c. Main drive (clutch) gear bearing retainer gasket damaged
- d. Operating shaft seal leaks
- e. Idler shaft expansion plugs loose
- f. Countershaft loose in case

Tips on using the NEW ACRYLIC LACQUERS



Know the difference between regular lacquers and acrylic lacquers before spraying



Applying properly thinned acrylic lacquer. Allow 4 to 6 hours drying time & compound.

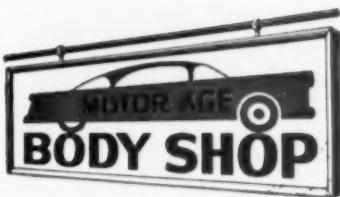
PAINT shops will be getting in more and more cars finished with the new acrylic lacquers. Cadillac, Chevrolet, Oldsmobile and Pontiac produced cars with these finishes in 1957. This year several manufacturers will be increasing the varieties of colors available in this type paint.

Touch up or repair techniques differ only slightly from those required with regular lacquers. The important thing for painters to remember is that while panels may be sprayed with regular lacquer, and a good match obtained, the surface will not weather

the same as the section finished in acrylic materials. Therefore, the painter should be sure that spot repair is made with the same type of lacquer as the car was originally painted.

Acrylic lacquers are more sensitive to amount of air pressure, reduction, and surface preparation than conventional lacquers or enamels. They are more easily softened with regular wax and grease removers. So a special remover must be used.

Usually spraying with acrylics requires
(Continued on page 102)



Before applying undercoat, remove wax, grease & polish with cleaner.



Top Right: Cleaning the bare metal and etching it for best adhesion.

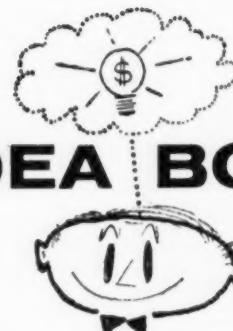
Right 2nd: Compound surrounding area to remove primer-surfacer overspray.

Right 3rd: Spray regular lacquer base primer-surfacer on bare metal.

Right 4th: Painter is shown sanding and feather-edging primer-surfacer.



Service Man's IDEA BOOK



Logic and Fan Belt Profit . . .

Logic has proven again and again that it is more salable than "gimmicks" or "peculiarities." Service Man's Idea Book, this month, presents five logical rules that may boost your fan belt sales as much as 50 per cent during hot weather.

These are substantiated facts. They were gathered by a prominent belt manufacturer in a coast-to-coast survey of successful fan belt sales methods. Briefly, here they are:

1. *Look for a worn belt on every car!*
2. *Know the three major casualty signs!* First, if the belt is cracked or frayed. Second, if it's incrusted with grease and oil. Third, if the pulleys are conspicuously bottom bright, indicating a worn or wrong size belt.
3. *Explain to a motorist in need of a belt why he should buy it then!* Tell him of the



Promotion idea for sale of oil filters has been introduced by Purolator Products. Company suggests that tag be placed on motorist's steering wheel after filter change. Tag records present mileage and mileage when new filter is needed.

belt's cooling value; that it supplies power to both electrical and accessory parts.

4. *Sell the sound value of preventive maintenance!*

5. Ask yourself this point: *Are you aware of the profits in belt replacements?* (The fan belt manufacturer mentioned already offers these impressive figures taken from passenger cars.) It requires five to six minutes to replace a fan belt. At the dealer's average \$1.10 profit, plus 25 cents to \$1.00 installation charge, you earn up to \$1.75 for five minutes' toil. Lay aside that paper and pencil—it's a profit at the attractive rate of \$16.20 per hour.

We think the five points comprise a logical sales formula. Of course, selling any commodity is basically a matter of alertness and logical merchandising. The fan belt manufacturer boils it further—looking, telling and selling.



This Florida automotive dealer (right) overcame the stamp problem by passing out genuine stamps.

CUT ALONG BOTTER LINE AND POST IN A PROMINENT LOCATION

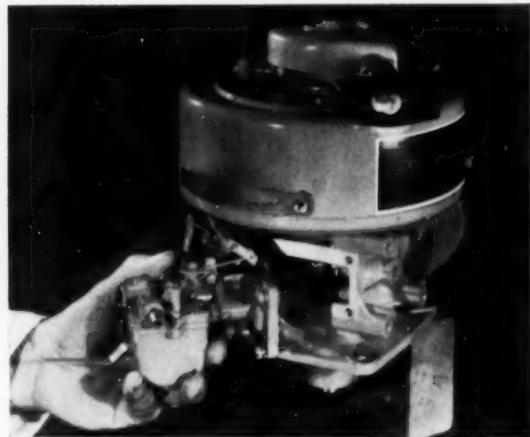
June 1958

MOTOR AGE'S 1958 Merchandising Calendar

MOTOR AGE'S 1958 Merchandising Calendar

POWER MOWER service on the Jacobsen

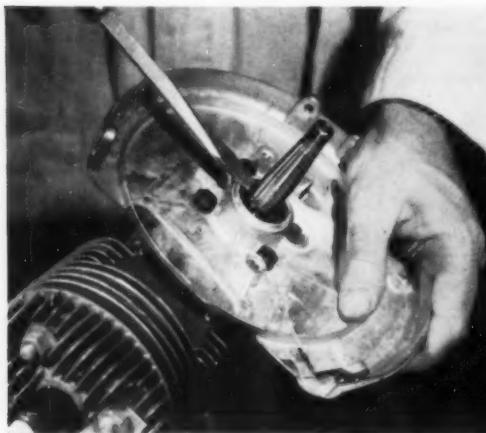
*Be prepared to service
this popular lawn mower
engine by reading this
step-by-step description*



Take off the carburetor by removing the four screws that hold it to the crankcase.

Remove the flywheel key as well as the magneto cam from the crankshaft.

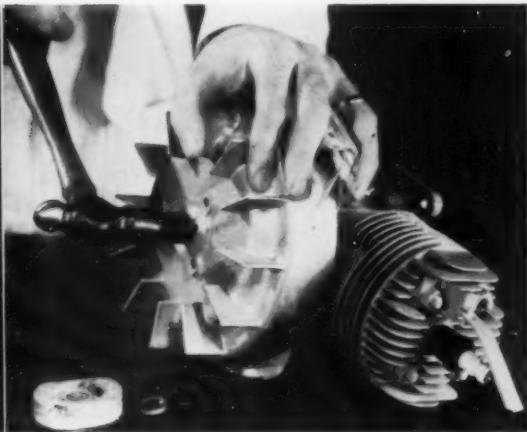
Remove cylinder head after taking out spark plug.
Note position of flat washers and stop switch.



two-cycle engine



The starter ball retainer is removed from the crank-shaft. Use a large wrench to prevent damage.



Use a block of wood against the crankshaft to remove the flywheel. Never a steel hammer.

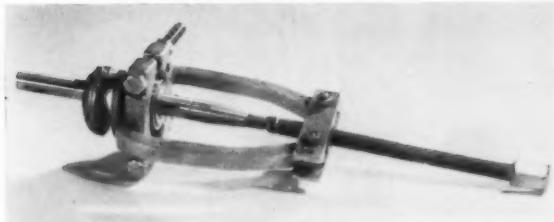
The cylinder is removed from the crank case by tapping it lightly with a mallet as demonstrated.

Remove three screws from the engine base. Then press or tap the crankshaft out of the crankcase.

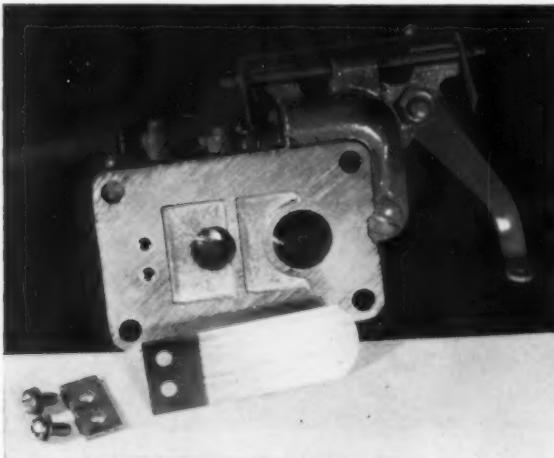


Servicing the Jacobsen Two-Cycle . .

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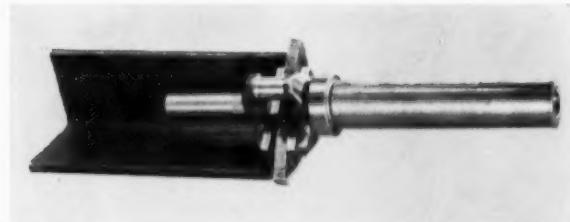


Removing needle bearing race. Two recesses are provided in the spacer for the puller prongs.

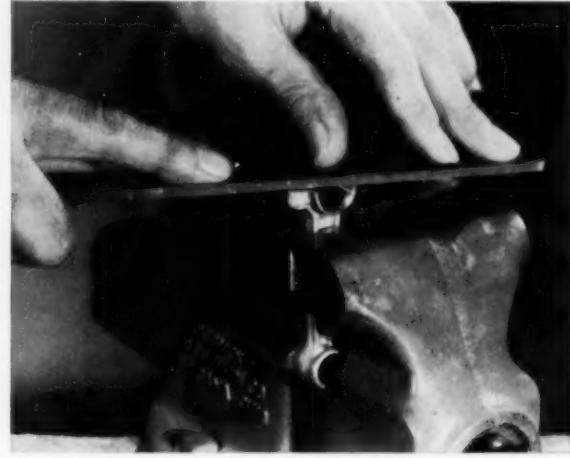


Reed acts as inlet valve. It has slight bend near mounting end to provide tension against the mounting plate.

Piston and rod assembly are inserted into cylinder from the base or chamfered end of the cylinder.

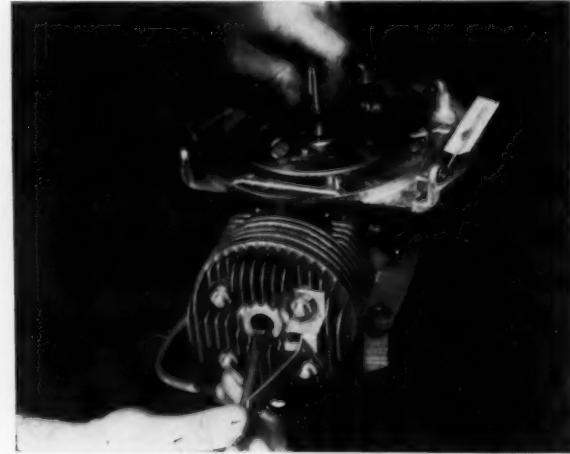


A piece of angle iron is used in place of the puller in order to remove the crankshaft main bearing.



Assemble rod and piston to crankshaft before installing crankshaft into crankcase. If loose, rod can be filed.

Small scale is inserted through the spark plug hole to determine position of the piston for proper timing.



How MOTOR AGE CAME to My RESCUE

Letter Wins \$25 Saving Bond:

Dear MOTOR AGE Editor:

If there is one single way in which MOTOR AGE has helped me, it is toward the realization that there does not need to be peaks, valleys or seasons in automotive sales or maintenance volume.

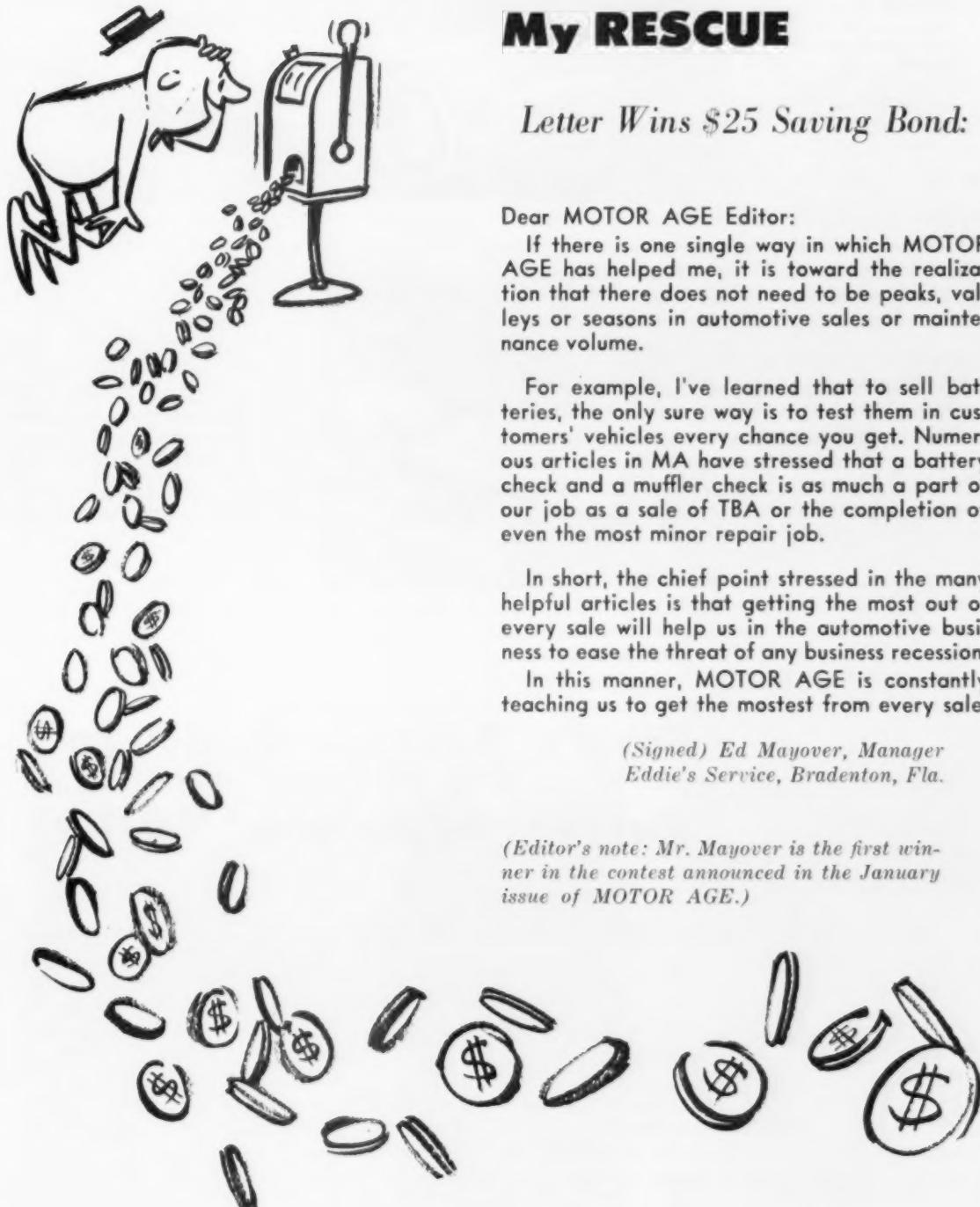
For example, I've learned that to sell batteries, the only sure way is to test them in customers' vehicles every chance you get. Numerous articles in MA have stressed that a battery check and a muffler check is as much a part of our job as a sale of TBA or the completion of even the most minor repair job.

In short, the chief point stressed in the many helpful articles is that getting the most out of every sale will help us in the automotive business to ease the threat of any business recession.

In this manner, MOTOR AGE is constantly teaching us to get the mostest from every sale.

*(Signed) Ed Mayover, Manager
Eddie's Service, Bradenton, Fla.*

(Editor's note: Mr. Mayover is the first winner in the contest announced in the January issue of MOTOR AGE.)



At right: Five-passenger Taunus sedan has 102.5-inch wheelbase and an overall length of 172.2 inches. Its four-cylinder engine delivers 67 hp at 4400 rpm.



At left: Taunus Combi-wagon (station wagon). Designed for five passengers and plenty of luggage room, its second seat folds flush with floor. It is powered by an overhead valve, four-cylinder engine delivering 67 hp at 4400 rpm.

TAUNUS

Ford's Foreign-Built Job Enters American Market

Germany's Taunus offers American styling and fuel economy

SIX models of the compact, new Taunus passenger car, manufactured in Cologne by Ford of Germany, will be introduced by Ford Motor Company in the United States. The Taunus models have styling and engineering features designed to please American tastes while offering top

fuel economy and low cost to the purse.

The new Taunus sedan is two and one-half feet shorter and more than half a ton lighter than some of the 6-cylinder models of the Big Three American cars. It provides up to 35 miles per gallon in fuel economy.

Taunus models to be imported for sale in

the U.S. include the Taunus 17-M deluxe two-door sedan and the standard model; the Taunus 17-M four-door sedan in deluxe and standard models and the Taunus two-door Combi-wagon (station wagon) in both deluxe and standard models.

Taunus models will be imported in addition to the line of English Ford cars which includes 14 models.

Featuring unitized body construction, the Taunus models are powered by an economical, overhead valve, four-cylinder, short stroke engine which develops 67 brake horsepower at 4400 rpm and 97.6 foot pounds of torque at 2200 rpm. Engine displacement is 103.62 cu. in. and compression ratio is 7.1 to 1. Test runs over American roads at 40 miles an hour show an average of 35.3 miles per gallon fuel consumption. Cruising speed is 78 mph.

Employs Low Silhouette

The Taunus two and four-door sedans feature a smartly styled, American-inspired low silhouette. Built on a 102.5 inch wheelbase, their overall length is 172.2 inches, overall width 65.7 inches and overall height 57.7 inches.

The Taunus Combi-wagon carries five passengers in comfort with twice as much lug-

gage space as in the conventional sedan. By folding down the rear seat, the floor of the wagon becomes completely level and the tailgate extends on the same level to accommodate longer objects.

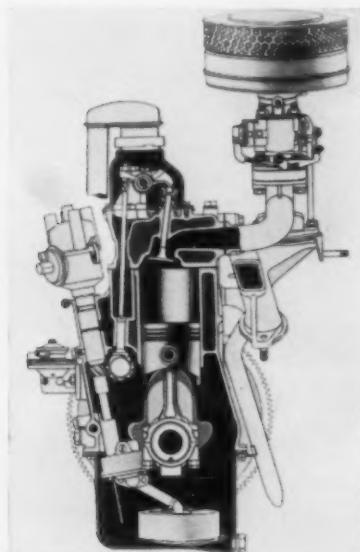
Deluxe Taunus models have a padded instrument panel with a full complement of instruments and a lockable glove compartment. The safety steering wheel is of the dish type and the finger-tip gear shift is mounted on the steering column and controls the three-speed transmission which is synchronized in all forward gears including first.

An automatic clutch called the Saxomat, is an extra cost option which eliminates the clutch pedal. All shifting is accomplished by moving the gear shift lever on the steering column to first, second, high or reverse gear. An electric control switch in the gearshift lever actuates the magnetic clutch operating mechanism automatically. This mechanism also automatically adjusts the engine speed as gears are changed.

The interior of the Taunus utilizes colorful upholsteries of plastic materials in two-tone combinations covering foam-rubber padding. Two passengers can ride comfortably in the front seat and three in the rear seat.

(Continued on page 94)

Below: A view of the engine and a cutaway at right of the 4-cylinder Taunus 17-M engine. Cutaway shows the engine's short-stroke design with over-head valve features.



AUTO CLINIC stresses customer

How Luke Banks is cashing in on program built around

INDEPENDENT garage operator Luke Banks, of Auto Clinic, knows his customers, though it has taken him 36 years to really learn all their requirements. His East Detroit shop is operating well into the black just from force of habit. Now, with a five-stall garage and a good name in a growing community, he expects to improve the profit picture. In spite of increasing competition.

Today, when some are crying the blues, Luke Banks is beginning to cash in on a 9-point program built around customer satisfaction. In fact, now that the program is rolling, Luke even has time to head the local Chamber of Commerce.

Here are the nine legs to this customer development program. He began it several years ago when he set out to provide dependable

service in ignition, carburetion, transmission and alignment work. . . . THE AUTO CLINIC:

- 1. Makes use of effective advertising
- 2. Provides extras in customer service
- 3. Cooperates with service stations and truck fleets
- 4. Offers incentives to a 5-man mechanic work force
- 5. Trains specialists—after they have had adequate general backgrounds
- 6. Pays mechanics to go to school
- 7. Offers accurate cost estimates and makes careful diagnosis
- 8. Utilizes only the best and latest in shop equipment
- 9. Provides good shop facilities for efficient work.

"You can't expect business to come to you



Luke's 5-stall garage is neat, well-lighted and laid out for efficient work. Luke is shown diagnosing car with mechanic prior to work.

satisfaction

the happy customer



Luke Bank's neat shop and service truck make a good impression.



Above is rebuild room where carburetors, speedometers, generators and other small units are repaired. Note cleanliness and carefully filed parts.

automatically," says Luke. So he invests in people—to inform them of his services. He has developed a direct mail program that contacts 3500 customers and potential customers from a 25-sq.-mi. area. Every four months these people receive postcards telling of some phase of available Auto Clinic service. One of his girls spends nearly half her time revising lists and compiling new ones from various directories. An addressing machine now on order will simplify the operation.

Accurate records are kept on all work that is performed. The information is transferred to card files. These serve in turn as sources for future contact through both direct mail and telephone. Periodically the girl reviews these cards to see what work was done on specific cars, the dates and the mileages. Then she contacts the owners and suggests a tune-

By M. K. SIMKINS, Detroit News Bureau Chief

up or repair work based upon the probable condition of the car.

Use of newspaper is another media used by Auto Clinic. Banks purchases an advertising service based upon a comic strip character; subscribes to a strip that effectively promotes his name throughout the area served by a local weekly newspaper.

Extra customer attention is another way of bringing them back, Luke says. He provides pick-up and delivery service and works on an appointment basis if requested. This way customers can be taken back to their homes or to work, their cars are delivered, or they can come in for work at a specified time and be assured that the work will be completed in a designated time schedule. This sort of service to the owners is practically as important as good service on their cars, according to Auto Clinic.

Make Use of Customer Financing

Another phase of the program that is paying off is a finance plan worked out with a local bank and a nearby finance company. Terms are arranged if requested, and a check-up of the customer is made prior to his coming in so that there is no embarrassment and no delay in obtaining credit.

Luke insists that 90 per cent of the people are honest, but he thinks percentages are

(Continued on page 99)



The information booth proved a haven among some 275 cars.

MA's Bill Montgomery (seated) and John Lawrence: Leisure spent in an Austin-Healey.

INTERNATIONAL AUTO SHOW: Sports Car Paradise!

"I'VE been to a lot of automobile shows," said one discriminating gentleman, "but I've never seen anything like this." The man was staring pop-eyed at the glittering array of foreign automobiles deployed over the second floor of New York's spacious Coliseum. His analysis does justice to last month's nine-day International Auto Show.

When Coliseum officials finally closed their doors for good, exhibitors of the sixty-odd makes jubilantly totaled more than a whop-

By John B. Lawrence, Associate Editor

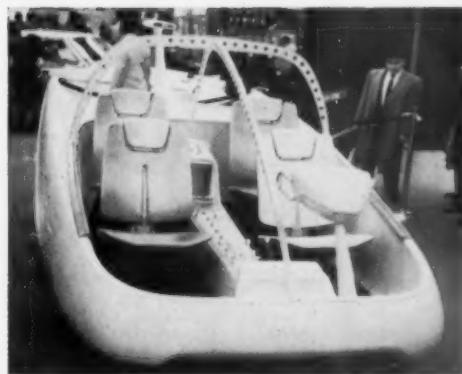
ping \$25 million in sales. In fact, sales of the foreign cars were so encouraging that many manufacturers were reported taking aim at higher U.S. sales for 1958.

Although official attendance figures have not yet been released, it is popularly believed that some 200,000 visitors broke the record set at the last New York show two years ago.

(Continued on page 114)



A part of the elaborate Coliseum show were (left to right): a VW rotating chassis display, Germany's Goliath, VW Camper, France's Simca Oceane, VW Karmann-Ghia convertible, German Goggomobile, Mercedes-Benz 300 SL Roadster, a DKW.



The "Astral," Studebaker-Packard's concept of the future for land, sea or air travel.



France's attractive Dyna-Panhard sports tourer, with fibreglass body, displayed a small 2-cylinder engine.

Palace guards in fur covered toppers stand tall at BMC exhibit.



It Takes TWO to CHISEL

Andy Anderson had to choose between doing business with customers who wanted the best work and customers who wanted the cheapest. Which did he choose?



"We can't go on meeting like this, Marilyn, the boss is beginning to suspect."

ANDY Anderson who owns and operates Anderson's Automotive Service, 4901 Dyer Street, El Paso, Texas, has no trouble with chiselers. It takes two to chisel and Andy refuses to be drawn into the game.

For several years Andy operated a service station on the opposite corner from his present location. With a small shop in conjunction where he learned there were two types of customers. Those who wanted the best work, and those who wanted the cheapest. Andy learned also that a garage could not cater to both, it being utterly impossible to be the best and the cheapest simultaneously.

The Garageman's Reputation

It may sound strange to say that once established the garageman only attracts a certain patronage. But he does. He has no choice but to operate on the reputation of his shop. Located on an important Highway, Andy gets very little transient trade.

Andy's garage of all metal construction is 32 x 100. This gives him 5 direct driveways—one of which leads directly on to the front-end pit. There are 4 full time mechanics. There is a 30 foot slab running the full length of the garage and plenty of hard-top in front of that for customer parking. Too, there is a separate parts and office building.

Very often Andy has to turn away regular customers. But not before he explains "why" he cannot take care of them right now. If he loses this particular job, by being friendly and explanatory, he doesn't risk losing a customer. Just as likely as not, the customer will inquire when Andy can take him.

Andy isn't too anxious to book customers



At left: Looking the length of Andy's shop from the front-end pit. Note the two cars up on the shop's hoists.

ahead. There is always the likely possibility some job will hang longer than estimated and he will have to disappoint a customer. And this phase of uncertainty is explained to the customer. Having had this experience elsewhere, the customer readily understands. And they appreciate Andy's attitude.

Nevertheless, on occasion motorists drive in to inquire about an estimate. A big percentage of the time Andy is told that he is too high. The motorist can get the same job done elsewhere for less.

When this occurs, Andy doesn't jump madly to the conclusion he has an objection-

able shopper to deal with. Just as likely as not, the cagey motorist is only putting a feeler on Andy.

100 Per Cent Guarantee

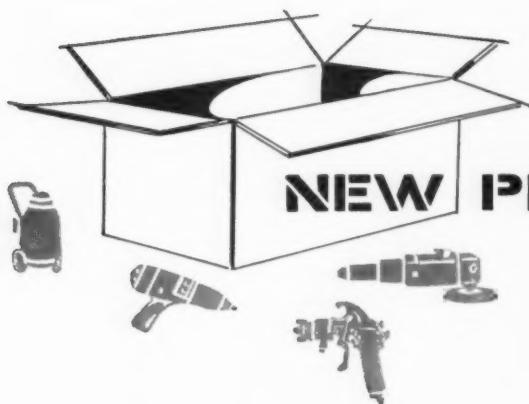
Consequently, the motorist is told that this shop undertakes no job which it can't unconditionally guarantee 100 percent.

Too, Andy is quite frank in telling the customer that the shop has to make a profit . . . the same as any other shop in order to remain in business. And that this shop just will not accept jobs where any phase of the

(Continued on page 91)

At far right is Andy Anderson's office and parts department. They will be moved when the enlarging runs entire length of half block.





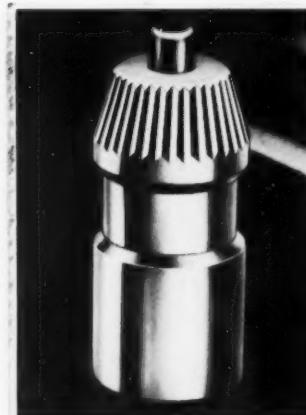
NEW PRODUCTS

SHOW WINDOW

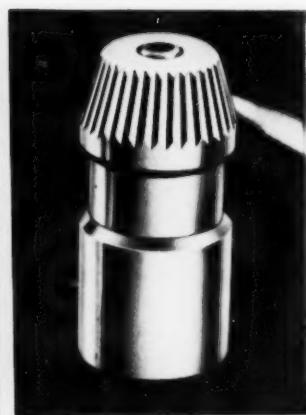


280. Precision Tool

United Motors Service, Div. of GM: A precision tool is offered to simplify ball-bearing adjustment on front wheels. Correct measurements are recorded on an embossed gauge. According to the company, the nut is tightened to the tool's first mark, then returned to zero mark and cotter key inserted.



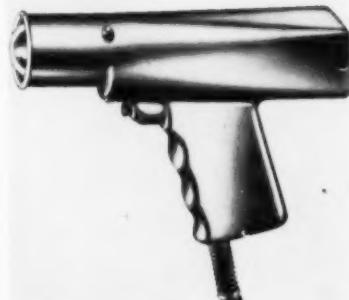
TIRE PRESSURE O.K.



DANGER LOW TIRE

281. Tire Pressure

Frebank Company: A built-in indicator of tire pressure is available which instantly records a loss of 6 or more pounds. Entitled "No-Lo," the indicator is factory set at a designated pressure. As long as this pressure is maintained, a bright red indicator rod remains in sight. When pressure escapes, however, the rod slips from sight. The company claims the aluminum unit is set in five-lb increments for truck tires, two for passenger cars. The light indicator is 1-in. long, and $\frac{7}{8}$ -in. in circumference. Installation is by hand with no torque or balance problem.



282. Power Timing Light

Harvey E. Hanson Company: Offers a power timing light (Model 24) operable on a 6 or 12-volt car battery without changeover or adjustment. A special circuit design is said to produce brilliant light.



283. Pocket-Size Plier

▲ Champion DeArment Tool
Company: Designed for a variety of tasks, a pocket-size plier is offered. The thin-jawed model (Channellock No. 426) is $6\frac{1}{2}$ -in. long; said to provide reliable gripping power for inaccessible areas. Interlocking tongue-and-groove channels prevent annoying slippage. The plier has five adjustments with jaw capacity ranging to $\frac{7}{8}$ -in. in parallel position. Forged from high grade steel, the plier is furnished in a full polished finish.

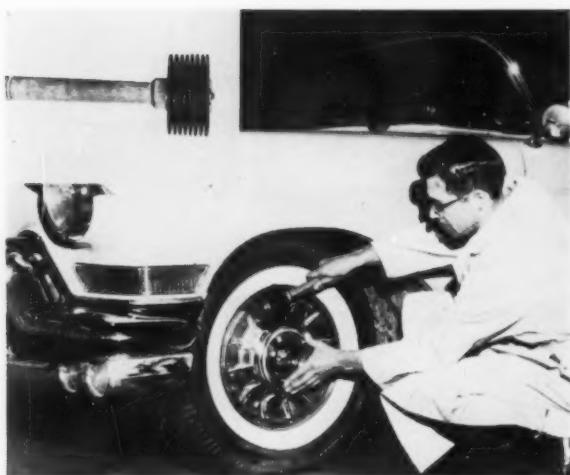
company claims the lacquer will preserve automobile bumpers and trim.

284. Protective Coating

Eastman Chemical Products, Inc: A colorless lacquer for the protection of chromium-plated surfaces is available in an aerosol container. The company claims the lacquer had been restricted to industrial users. Entitled "Brite #3," it spreads an impenetrable film which will withstand adverse weather, salt spray and abrasion. Only precaution requires metal surface to be free of dirt, grease or oil. Coat will dry in some 15 minutes. The

285. Wall Chart ►
Clevite Service, Div. of Clevite Corp: A wall chart describing the causes, effects and remedies of common engine failures is available for repair shops. According to the company, the chart is capably illustrated; also furnished complete diagnoses of engine failings. It is also offered through N.A.P.A. jobbers.

(Continued on page 68)



New Products . .

(Continued from page 67)

286. MoPar Counter Card
 ▼ Chrysler Corp: A color counter card is available announcing the company's 1958 MoPar air conditioning system. Consumer folders are included. The new "Cool Aire" system (Model C) will also fit several of the company's 1957 cars.



287. Cushioned Hammer

▲ John Bean Div, Food Machinery & Chemical Corp: A cushion-roll hammer is available for installing glass and other materials requiring cautioned striking force. The hammer, the company claims, has been used by assembly lines to install hub caps, mouldings, windshields and rear windows. It is also offered to car owners.

288. Clutch Series

Lipe-Rollway Corp: The first of a series of heavy duty clutches (DPB series) has been introduced. Described as a 13-in. single plate unit, it is rated for engines developing up to 335 lbs ft torque. The unit has chrome silicon pressure springs with an insulating washer under each spring; also large, non-warping pressure plates designed to dissolve friction heat.

289. Visor Mirror

Visionade Mfg. Co: A "vanity" visor mirror in a foldaway style has been released. The mirror has an oval design conforming to facial outlines. A swivel mechanism allows it to be lowered. It is designed for all car visors, including heavy sponge varieties.

290. Testing Unit

▲ Otis Auto Dynatester, Inc: Commercial production of the "Dynatester," a machine that creates actual driving conditions thereby allowing autos, trucks and buses to be garage examined, was revealed. According to the company, "Dynatester" both absorbs and applies force while functioning at road speed; also allows testing of parts not driven by the engine. Its instruments are mounted on a panel within view of the operator. Readings are taken while vehicle's front and rear wheels turn on the unit's rollers. Speeds of 60 to 70 mph have been recorded. The company claims an electric pendant switch provides push-button control.

291. Hand Cleaner

Canton Chemical Corp: A hand cleaner (Protecto) is offered that can be used with or without water. The company claims it will not evaporate. A special lanolin and chemical formula combats grease, dirt and other impurities; also chapping. The cleaner is offered in a grip-size container with a disappearing snout applicator.

(Continued on page 70)

You Are Qualified to be a Member Of The Automotive Service League

This is a new and unusual organization open to all automotive service shops which have been qualified by Motor Age. If you haven't done so before, detach and return the postage free postcard below.

[The second and lower postcard is for more new product information.]



To MOTOR AGE

Please send me our membership plaque in the AUTOMOTIVE SERVICE LEAGUE.

We operate a
(check one)

Car Dealership
 Repair Shop

Service Station
 Specialty Shop

There are full time mechanics at our location.

Your Company

Your Name Your Title

Address
(Street & No.) (City) (Zone) (State)

Frank P. Tighe, EDITOR MOTOR AGE
P.O. Box 102, Village Station, N.Y. 14, N.Y.

5/56

Please send me further information on the New Products, the code numbers of which I have circled below. (Be sure to circle the code number).

280	281	282	283	284	285	286	287	288	289
290	291	292	293	294	295	296	297	298	299
300	301	302	303	304	305	306	307	308	309
310	311	312	313	314	315	316	317	318	319

[Postcard valid for 90 days only.]

Your Name Your Title

Your Company

Your Business: Wholesaler Repair Shop Car Dealer

Address
(Street & No.) (City) (Zone) (State)

FOR
LEAGUE
MEMBER-
SHIP

Please Note!

When filling out cards—
be sure to sign your
Name and Address!

FOR
NEW
PRODUCTS

New Literature

292. Brake Catalog

Lisle Corp.: A 96-page catalog is offered of the company's line of hydraulic brake parts, cylinders, kits, hoses, switches and fluid. An application section reportedly describes wheel cylinder-cup specifications. The catalog also provides information and cross references of cylinder component parts, kit contents, parts illustrations, buyers' guides and numerical listings; also tools, fluid, assortments and complete interchanges.

293. Auto Lighting

Auto Lamp Mfg. Company: A 40-page color catalog of automotive lighting equipment for the replacement market has been announced. The company reports this to be the largest catalog they have produced of their expanded Pathfinder line of auto lighting and highway safety equipment. Illustrations of multi-size lights are surrounded by color blocks which contain the lens colors available for each light. Accompanying reference tables describe size, voltage, and replacement lenses and bulbs.

Application charts and numerical listings are also included of replacement items. For trucks, trailers and other vehicles of long distance travel, there's a coverage of highway safety equipment.

294. Tubeless Tires

Dill Mfg. Company: A four-page folder, offered in pictorial form, presents the step-by-step operations of repairing both passenger cars and truck tubeless tires. The folder is said to reveal the often overlooked pitfalls common to tubeless repair. It also describes how to perform proper repair methods in the shortest time. The folder's pictorial sequence is found on the inside two pages, adapting it for use as a wall chart. An illustrated listing of tools and supplies is included on the back page.

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POSTAGE WILL BE PAID BY

Chilton's MOTOR AGE

P. O. Box 102,
Village Station,
New York 14, N. Y.

Readers Service Dept.

FIRST CLASS
PERMIT No. 36
New York, N. Y.



295. 1958 Catalog

Automotive Electric Association: Released recently its 1958 Electrical and Fuel Systems catalog. The booklet contains descriptions of fast-moving parts for distributors, generators, starting motors, carburetors, fuel pumps, gauges and lines for both cars and light trucks. An illustrated section and a price list are also included. Units and parts shown are said to be original equipment. The Association claims more than 300,000 copies will be distributed through Central and Service Distributor members.

296. Windshield Wipers

Sprague Devices, Inc.: Offers a catalog for trucks and buses listing air-push windshield wiper replacements and original equipment kits. The push kits are listed alphabetically and, when available, model number and year of

(Continued on page 94)



"Sorry about the last one—this one's a MERIT!"

No more complaints about mufflers rusting away in a few months. Since he switched to Merit, this dealer is up to his ears in muffler service. Merit ovals feature new Anti-Rust design, have $\frac{1}{2}$ heavier Cushion-Aire® shells, up to $\frac{2}{3}$ heavier outer heads, heavier inner parts, for greater strength and longer life. All this, plus extra silencing and lower back pressure. They feel heavier, look sturdier, cost nothing extra. No wonder they're so easy to sell.

Merit backs dealers with smart selling aids—big curb sign, inspection tags, posters and an 8-muffler display rack.

Give your muffler business a real boost—switch to Merit's complete, quality line today. Contact your Merit jobber or write us direct.

The big move is to

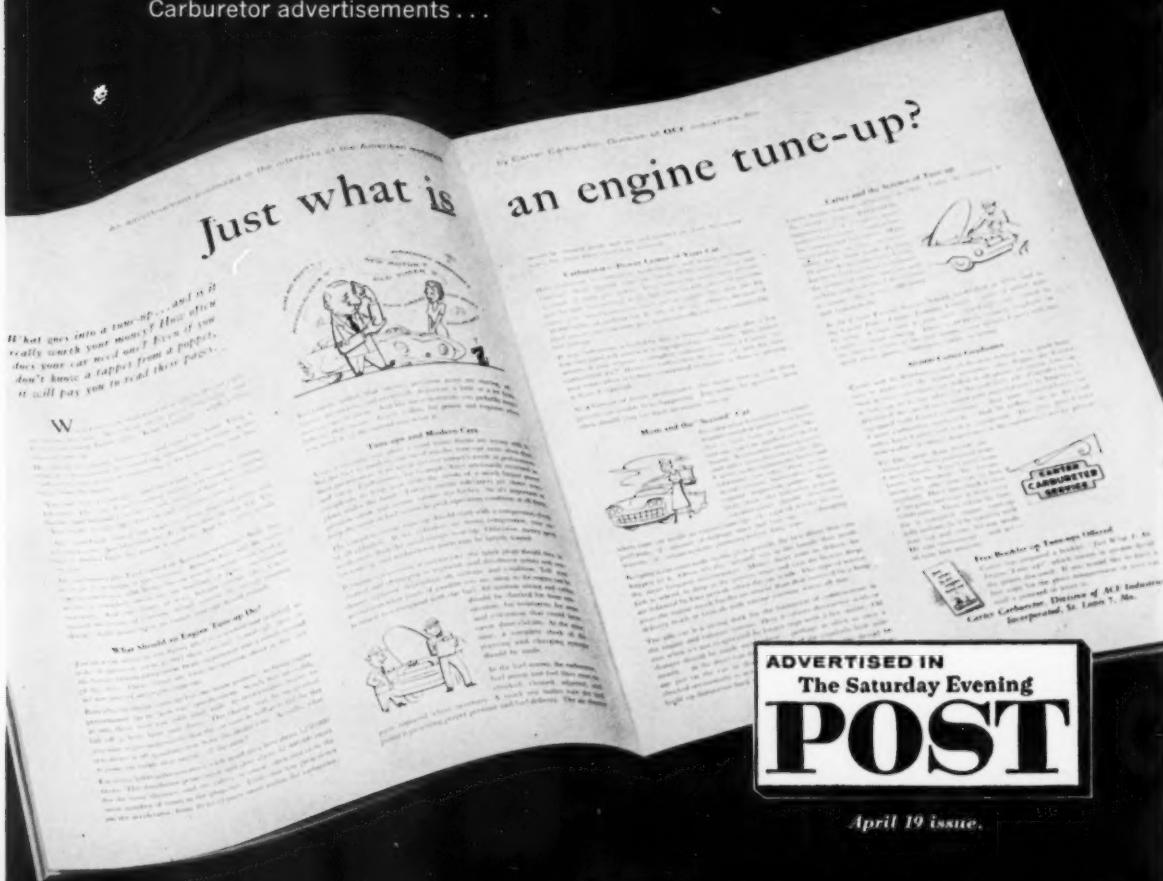
MERIT

MUFFLERS AND PIPES

Dept. 15E, 619 Smith St., Toledo 1, Ohio

You saw it in the Post!

Another two-page spread in the continuing series of powerful Carter Carburetor advertisements . . .



... telling your story and selling your services to the American motoring public.

Tie in now to build your business

See your Carter Supplier for reprints of this Post Ad and details on tune-up booklets for your customers.

C A R T E R C A R B U R E T O R
D I V I S I O N O F Q C F I N D U S T R I E S , I N C O R P O R A T E D • S T . L O U I S 7 , M I S S O U R I

\$25

FOR THE KINK
OF THE MONTH

TIME AND WORK SAVING IDEAS ON CARS AND

SHOP KINKS

TRUCKS CAN PAY OFF. SEND YOURS IN NOW!

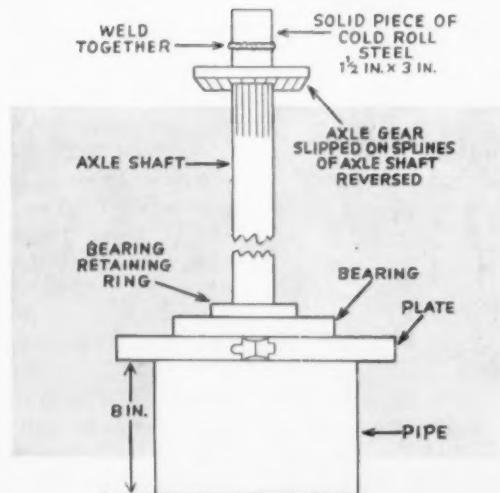
\$7.50

PAID FOR
EACH KINK

\$25

Tool For Removing Rear Axe Bearing On Chevys

KINK OF THE MONTH



Here is a tool for removing rear axle bearing and retaining ring on 1955 to 1957 Chevys for garages which do not have a press. This tool is made from a Chevy '55 to '57 rear axle gear. Take a piece of cold roll steel and weld to axle gear with teeth of gear facing downward. This tool can be struck with a hammer without damaging the axle or its splines. This operation can be done on the garage floor. Place an 8 x 8 inch pipe on floor. Use a Chevrolet J-5741 press plate. Set axle and plate over pipe which lets the axle flange inside pipe for removal of axle bearing. Place axle bearing removal tool on spline end of axle and strike downward. This tool setup can also be used on some Ford models. L. Iacono, 121 W. 21st St., Chester, Pa.

Replacing Light Bulbs In Chrysler's Push Buttons

To replace light bulbs in push buttons on Chrysler built cars, I remove front cover and use a four inch length of drain pipe hose. It slips over the bulb and is snug enough to turn it and keep it in place. This saves time in not having to remove buttons to reach the bulb. Joe Nawara, Zapalac Motor Co., Rosenberg, Texas.

Swivel Fish Hook Repairs Horn Wire

In some cars the horn wire inside the steering column is subjected to considerable twisting that causes grounds or breaking. This can be eliminated by soldering a fishline swivel of brass to the horn wire, and tapping the swivel. H. Joseph, Joseph's Auto Service, Box 22 Gardenville, Pa.

Soap Used To Catch Chips When Using Tap

Pack a blind hole with softened soap before you thread it. This will enable you to cut threads to the bottom of the hole without stopping to blow out the chips. As you turn the tip into the hole, the soap is forced out, carrying the chips to the surface with it. The soap also serves as a lubricant, making threading easier. Harold Newberg, Gowrie, Iowa.

(Continued on page 74)

Shop Kinks

Continued from page 73

Removing Brake Drums Frozen To Axle Hub

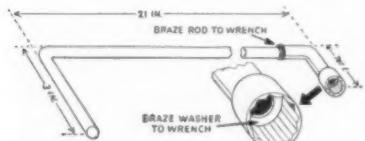
To remove Chevrolet brake drums that are frozen to the axle hub, take a punch or drift with about $\frac{1}{4}$ to $\frac{3}{8}$ inch flat tip and a hammer. Pick a spot on the drum as near the shoulder of the hub as possible and give it a sharp rap. Continue on around the hub moving the punch or drift about $\frac{1}{2}$ inch after each rap until the drum pops off. *John Kutha, Jr. c/o Riverdale Service Station, 350 West 230th Street, Bronx, New York.*

An Easy Way To Remove Stones From Valve Reseater

We have recently experienced a problem with our valve seat reseating outfit. Our problem and solution is as follows: After grinding the seats, the stones were next to impossible to remove from the stone carrier. In fact a couple of times we had to break the stones before we could get them off. We found by cutting a gasket out of window tape and placing them between the stone and carriage that they are easy to remove no matter how long they are used. *Houston Clark, Houston Clark's Garage, Campbellsville, Kentucky.*

Special Wrench To Remove Top Starter Bolt On Nash

The top starter bolt on the six-cylinder Nash Ambassador



with hydramatic transmission is almost impossible to get out and in without a special wrench. I made one that works fine from a $\frac{5}{8}$ -in. box-end wrench, a length

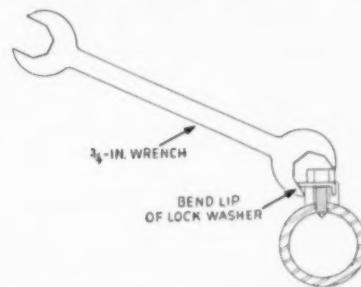
of half-inch round stock and a flat washer. Dimensions are shown in the diagram. *Victor McGee, 1111 Ridgeway St., Mayfield, Ky.*

Tool For Removing Tubeless Tire Valve Stems

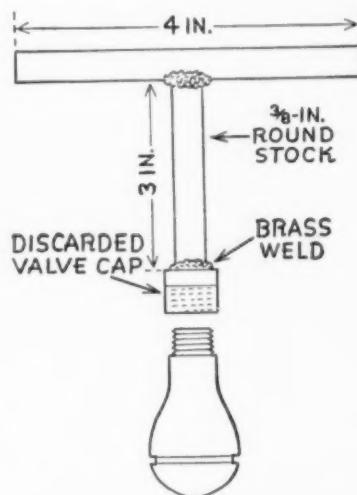
When it becomes necessary to replace tubeless tire valve stems I use an inexpensive tool which I made for this purpose. I made it by taking two pieces of steel rod and welding them together in the shape of a "tee" handle. I

How To Bend Locks On Starter Drives

We came upon what we think is a time-saver and the most simple method for bending the locks over the Bendix drive bolts. We use a $\frac{3}{4}$ inch open end wrench. Just lift up on the



wrench and the lock is bent right into place. *Joel T. Heckman, P. O. Box 175, Valdosta, Ga.*



then brazed a discarded valve cap onto the end of the rod. We have found the tool very fast and efficient for this particular job. *Thomas Mallams, Fair Brothers Service, 619 Auburn Ave., Pontiac, Mich.*

Resetting Float Wire To Correct Gas Gage

When faced with a gas gage that does not read correctly due to the tank unit, I've found the best way to reset the float wire is to use a ruler to measure the depth of the fuel then in the tank. Thus, if the gasoline level comes up to $1\frac{1}{2}$ inches in a 6-inch deep tank, then the wire arm should be gradually bent so as to have the dash unit one-quarter full on its reading. Replace the tank unit temporarily with at least two screws but be sure to turn off the ignition before removing the tank wire as a spark can be fatal. *Ben L. Davis, Belmont Auto Service, Queens, New York.*

If you have an original idea for a special tool, a short cut on any job or any trick of value to others, write it down and if necessary make a rough sketch. Just make it clear. Send it to Motor Age. If your Kink is used it may bring you \$7.50 or \$25. All entries become the property of the Chilton Company. Because of the quantity of entries sent in, none can be returned.

*In the
automotive
after-market*

THERE'S NO BUSINESS LIKE CHEVROLET BUSINESS!

BECAUSE... One out of every four cars and trucks on the road is a Chevrolet... that's more than any other make by far!



BECAUSE... Your Chevrolet dealer can be your dependable one-stop source for genuine Chevrolet parts.



Over 15,000,000 Chevrolet cars and trucks on the road! That's a big service market! Your Chevrolet dealer is ready, willing and able to help you serve that market.

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Each genuine Chevrolet part is built of the same high-quality materials and to the same rigid engineering standards as the original part. All are made to work together —made for a Chevrolet.

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MAKE YOUR CHEVROLET DEALER YOUR PARTNER IN SERVICE
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Do the brake parts YOU use fit?...



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LOCKHEED HYDRAULIC BRAKE PARTS, FLUID and BRAKE LINING • AIR HORNS • AIR BRAKES • TACHOGRAPHS

ENGINEERED QUALITY MAKES the DIFFERENCE

Wagner® Lockheed REPLACEMENT BRAKE PARTS

fit right because they're engineered right!

Never underestimate the importance of engineered quality—because engineered quality, such as you get in Wagner Lockheed Brake Parts, provides the right fit and correct performance of the parts.

The ease of installation of parts that fit right saves you time and labor in handling brake service—and shows you greater profit.

ENGINEERED QUALITY of Wagner Products begins with the design when quality of material and close tolerance of manufacture is specified. Metal parts specifications include casting of dense, non-porous structure that will machine to a high mirror finish. Rubber parts must be of high temperature resistant compound to provide sustained resilience. In brake fluid, quality depends upon correct chemical balance of superior ingredients.

The Wagner Lockheed line of hydraulic brake parts is the most complete on the market. Every make and model of vehicle is covered. Parts are available individually or in factory sealed kits.

Wagner Lockheed Replacement Brake Parts are manufactured by the same machinery in the Wagner factory—to the same specifications—as Wagner parts used as original equipment. These parts enable you to turn out the *safest* brakes possible. And remember, safe brakes protect lives.



Wagner Lockheed Brake Parts are packaged in factory-sealed containers. Contents are protected in handling, and when you open a container you have a clean, undamaged part of *known quality*. Available from your regular supplier of Wagner Lockheed Brake Parts, Brake Fluid, and Brake Lining. Ask him for details.



ELECTRIC MOTORS • TRANSFORMERS • INDUSTRIAL BRAKES

WP5&3

Wagner Electric Corporation
6498 PLYMOUTH AVENUE, ST. LOUIS 14, MO., U.S.A.
(Branches in principal cities in U.S. and in Canada)

Please send us Bulletin HU-411 on Hydraulic Brake Service. We understand that there is no charge or obligation.

NAME _____

FIRM NAME _____

ADDRESS _____

CITY & STATE _____

CURRENT PASSENGER CAR PRICE, WEIGHT AND BODY TABLE

Following are prices at factory for cars with standard equipment as of April 25, 1958
State or local taxes, transportation and finance charges and optional equipment are extra.

BODY MAKE AND MODEL	Last Price at Factory without Federal Taxes Federal Taxes and Handling Charges Suggested Price at Federal Taxes Shipping Weight	BODY MAKE AND MODEL	Last Price at Factory without Federal Taxes Federal Taxes and Handling Charges Suggested Price at Federal Taxes Shipping Weight	BODY MAKE AND MODEL	Last Price at Factory without Federal Taxes Federal Taxes and Handling Charges Suggested Price at Federal Taxes Shipping Weight	BODY MAKE AND MODEL	Last Price at Factory without Federal Taxes Federal Taxes and Handling Charges Suggested Price at Federal Taxes Shipping Weight
AMERICAN MOTORS CORP.							
RAMBLER		DODGE, Cont'd		FORD MOTOR CO., Cont'd		GENERAL MOTORS, Cont'd	
American		Regal, V8		Sta. Wags, V8		CADILLAC, Cont'd	
DeL. Sedan, 2d.	1631	Lancer, 2d.	2968	Ranch Wag., 2d.	2293	Impala...	7950
Sup. Sedan, 2d.	1710	Sta. Wagons	234	Ranch Wag., 4d.	2343	Sedan, 2d.	725
De Luxe 6		Suburban, 2d.	2715	Del Rio Wagon	2392	Sedan, 4d.	8675
Sedan, 4d.	1875	Sierra, 2s.	2775	Ctry. Sed. 6c.	2442	Sedan, 4d.	5425
Super 6		Sierra, 3s.	2907	Ctry. Sed. 8p.	2542	Sedan, 4d.	
Sedan, 4d.	2028	Cus. Sierra, 2s.	2940	Country Squire	2663	Sedan, 4d.	
H. T. Sedan, 4d.	2098	Cus. Sierra, 3s.	3072	Thunderbird	213	Sedan, 4d.	
Sta. Wagon, 4d.	2302	Custom 6	242	Tudor	3330	Sedan, 4d.	
Sedan, 4d.	2135	Sedan, 4d.	2327	Convertible	3708	Sedan, 4d.	
Sta. Wagon, 4d.	2409	Sta. Wagon, 4d.	2621	Lincoln		Biscayne V8	
Rebel, Sup. V8		Southampton, 2d.	4417	Coupe		Sedan, 2d.	2131
Sedan, 4d.	2149	Southampton, 4d.	4516	Hardtop, 2d.	4415	Sedan, 4d.	212
Sta. Wagon, 4d.	2423	Crown	354	Hardtop, 4d.	4553	Sedan, 4d.	2343
Rebel, Cus. V8		Southampton, 2d.	4928	Hardtop, 4d.	4553	Sedan, 4d.	3407
Sedan, 4d.	2256	Southampton, 4d.	5155	Premiere	4810	Sedan, 4d.	2397
H. T. Sedan, 4d.	2326	Sedan, 4d.	5155	Hardtop, 2d.	4810	Sedan, 4d.	3450
Sta. Wagon, 4d.	2530	Coupe	5273	Hardtop, 4d.	4810	Sedan, 4d.	3456
Amb. Sup. V8		Le Baron	411	Continental	4810	Sedan, 4d.	3458
Sedan, 4d.	2369	Sedan, 4d.	5488	Coupe, 2d.	5124	Sedan, 4d.	3459
Sta. Wagon, 4d.	2643	Southampton, 4d.	5488	Hardtop, 2d.	5124	Sedan, 4d.	3464
Amb. Cus. V8		Limousine	14019	Hardtop, 4d.	5124	Sedan, 4d.	3465
Sedan, 4d.	2504	218	981	Convertible	5124	Sedan, 4d.	3471
Sta. Wagon, 4d.	2588	234	15000	5124	Sedan, 4d.	3472	
H. T. Sedan, 4d.	2778	248	5960	5124	Sedan, 4d.	3473	
Sta. Wagon, 4d.	2862	3026	5960	5124	Sedan, 4d.	3474	
H. T. St. Wag., 4d	2862	3116	5960	5124	Sedan, 4d.	3475	
CHRYSLER CORP.							
CHRYSLER		PLYMOUTH ^a		MERCURY		OLDSMOBILE	
Windsor		Plaza V8	1943	Monterey		Series 88	
Sedan, 4d.	2849	Bus. Coupe	158	Sedan, 2d.	2422	Sedan, 2d.	2514
Hardtop, 2d.	2928	Club Sedan	2101	Sedan, 4d.	4287	Sedan, 4d.	2987
Hardtop, 4d.	2988	236	320	Hardtop, 2d.	2532	Holiday Coupe	2627
Twn. & Ctry. 2s.	3032	324	3915	Hardtop, 4d.	2588	Holiday Sedan	2699
Twn. & Ctry. 3s.	3476	3748	3915	Montclair	4150	Conv. Coupe	2931
Saratoga		Belvedere V8	2278	Hardtop, 2d.	2588	Fiesta Sedan	2990
Sedan, 4d.	3485	Club Sedan	174	Hardtop, 4d.	2622	Ht. Fiesta	3093
Hardtop, 2d.	3541	Sport Coupe	2327	Hardtop, 2d.	2622	Series 88	3115
Hardtop, 4d.	3613	Sport Sedan	3360	Hardtop, 4d.	2686	Sedan, 4d.	3115
New Yorker		Coupe	222	Montclaire	4155	Sedan, 4d.	3116
Sedan, 4d.	3923	Suburban V8	184	Hardtop, 2d.	2686	Sedan, 4d.	3117
Hardtop, 2d.	3971	Deluxe, 2d.	2318	Hardtop, 4d.	2686	Holiday Coupe	3117
Hardtop, 4d.	4024	Deluxe, 4d.	2420	Convertible	4165	Holiday Sedan	3118
Coupe	4356	Custom, 2d.	2431	Truck, 2d.	3210	Conv. Coupe	3119
Coupe	4356	Custom, 4d.	2431	Truck, 2d.	3210	Conv. Coupe	3119
Twn. & Ctry. 2s.	4456	Conv. Coupe	188	Truck, 4d.	3210	Conv. Coupe	3119
Twn. & Ctry. 3s.	4556	Conv. Coupe	208	Truck, 4d.	3210	Conv. Coupe	3119
300D		Deluxe, 4d.	2623	Truck, 4d.	3210	Conv. Coupe	3119
Hardtop, 2d.	4740	3018	2727	Truck, 4d.	3210	Conv. Coupe	3119
Conv. Coupe	5140	3058	2973	Voyager, 2d.	3243	Conv. Coupe	3119
Fury V8		3018	3030	Voyager, 4d.	3243	Conv. Coupe	3119
Sedan, 4d.	2808	Sport Coupe	224	3030	4435	Conv. Coupe	3119
DE SOTO							
Firesweep		EDSEL		BUICK		PONTIAC	
Sedan, 4d.	2567	207	2774	Special 40		Chieftain	
Sportsman, 2d.	2633	212	2845	Sedan, 2d.	2388	Sedan, 2d.	2335
Sportsman, 4d.	2692	216	2908	Sedan, 4d.	4115	Sedan, 4d.	3640
Conv. Coupe	2939	235	3174	Hardtop, 2d.	2489	Catal. Coupe	2396
Sta. Wagon, 2s.	2963	238	3221	Hardtop, 4d.	2580	Catal. Sed., 4d.	3700
Sta. Wagon, 3s.	3115	248	3364	Conv. Coupe	2686	Safari, 4d, 2s.	3755
Fireflite		Pacer	2440	Ext. Wagon, 4d.	2686	Safari, 4d, 3s.	3850
Sedan, 4d.	3268	280	3528	Century, 4d.	2686	Super Chief	3750
Sportsman, 2d.	3264	285	3620	Ext. Wagon, 4d.	2686	Catal. Coupe	2621
Sportsman, 4d.	3406	270	3676	Century, 4d.	2686	Safari, 4d, 4s.	3866
Conv. Coupe	3630	287	3917	Century, 4d.	2686	Safari, 4d, 4s.	3866
Sta. Wagon, 2s.	3684	291	3975	Century, 4d.	2686	Safari, 4d, 4s.	3866
Sta. Wagon, 3s.	3816	301	4117	Century, 4d.	2686	Safari, 4d, 4s.	3866
Adventure		Conv. Coupe	4285	Century, 4d.	2686	Bonneville	3119
Sportman, 2d.	3722	294	4016	4311	Conv. Coupe	3119	
Conv. Coupe	3999	315	4314	4311	4311	Sport Coupe	3119
DODGE							
Coronet 6		FORD*		BUICK		STUDEBAKER CORP.	
Club Sedan	2235	179	2414	Special 40		PACKARD	
Sedan, 4d.	2310	185	2495	Sedan, 2d.	2388	Sedan, 4d.	2932
Lancer, 2d.	2349	187	2536	Sedan, 4d.	4115	Hardtop, 2d.	2979
Coronet V8		Custom V8		Hardtop, 4d.	2421	Hardtop, 4d.	3262
Club Sedan	2335	186	2521	Conv. Coupe	4263	Sta. Wagon, 4d.	3384
Sedan, 4d.	2410	192	2602	4308	Hawk	3390	
Lancer, 2d.	2449	195	2644	4343	Scotman	3470	
Lancer, 4d.	2528	201	2729	4343	Sedan, 2d.	1631	
Convertible	2693	214	2907	4343	Sedan, 4d.	164	
Royal V8		Fairlane V8		Ext. Sedan	4375	Champion	1795
Sedan, 4d.	2554	203	2757	Sedan	409	Sedan, 4d.	2212
Lancer, 2d.	2607	207	2814	4375	Ext. Sedan	4630	
Lancer, 4d.	2664	211	2875	4375	Ext. Sedan	4630	
Cou. Roy. V8		Club Sedan	2289	4375	Ext. Sedan	4630	
Sedan, 4d.	2766	219	2985	4375	Ext. Sedan	4630	
Lancer, 2d.	2804	222	3026	4375	Ext. Sedan	4630	
Lancer, 4d.	2870	227	3097	4375	Ext. Sedan	4630	
Convertible	3015	238	3253	4375	Ext. Sedan	4630	
CURRENT PASSENGER CAR PRICE, WEIGHT AND BODY TABLE							
* Prices of 6 cyl. models are \$137 less than 8 cyl. models for the Custom: \$124 for the Fairlanes and \$107 for the Station Wagons.							
* Prices of 6 cyl. models are \$100 less than 8 cyl. models.							

NEW!

Dayton BOXED AUTOMOTIVE V-BELTS



Now, sell and profit with Dayton Automotive V-belts—individually BOXED for easier stocking, better showing and faster selling.

Bright, compact BOXES store conveniently in the space-saving BB-66R Merchandiser. You stock 50 sizes, 66 V-belts—coverage for over 92% of your sales opportunities. V-belt size is clearly visible on both BOX and Merchandiser so inventory control couldn't be simpler. One glance tells sizes you need to reorder.

Your sales area always looks neat and orderly, too. The BB-66R Merchandiser takes a space only 27 $\frac{1}{4}$ " wide by 43" high... sets on the floor or hangs on the wall.

Dust-resistant orange, black and white boxes set solidly in the heavy $\frac{1}{8}$ " coated steel wire rack... make an attractive mass display that immediately sells the superior quality of Dayton Automotive V-belts—the original equipment V-belt.

Find out how you can sell and profit from new, neat, conveniently BOXED Dayton Automotive V-belts. Send now for complete details, without obligation.



Dayton Rubber

MAIL TODAY!

Automotive Wholesalers Div. • The Dayton Rubber Co.
Dayton 1, Ohio

Gentlemen: Dayton's BOXED Automotive V-belts are just what I need! Rush details!

Name _____

Address _____

City _____ State _____

YOU'LL
PREFER
PROTO
PROFESSIONAL
TOOLS

IT'S NEW!

HERE'S WHAT
WE SAY ABOUT...

PROTO'S



ADJUSTABLE WRENCHES
PAT. PEND.

"... it sure saves time & skin off my knuckles."

Charlotte, Michigan

"It helps me to turn in more labor . . ."

Windsor, No. Carolina

"... never changes size while working with it."

Waco, Texas

"It's good, and something needed for a long time."

Derry, New Hampshire

"... it eliminates resetting the size every time . . ."

Oakland, California

"Your wrench is the best I've found . . ."

Butler, Pennsylvania



Sports Page

Continued from page 31

est player on the somewhat professional football team, called the Tigers, and he batted fourth on the town baseball team.

Fun at Sing Sing

In baseball his talents were limited. His footwork in the field left something to be desired and he was no Ty Cobb on the bases, but with a bat in his hands he could curdle a pitcher's blood. He was like that fondly remembered employee of the old Phillies, of whom George Phair wrote:

Buzz Artlett weighs a half ton;

He cannot field, he cannot run;

But when he wields his trusty wood,

The pellet leaves the neighborhood."

Joe was married to a sweet and pretty and gentle little doll who seemed exactly right for him. People used to chuckle seeing them together, this great lump of gristle with that airy bit of fluff on his arm, but whatever it took to manage Joe the Wrecker and make him like it, Mrs. Joe seemed to have.

Came the day the baseball team was invited up to Sing Sing to play the prison nine. It was an intriguing novelty then for convicts to schedule games with teams from outside, and Joe was delighted with the idea. He took over management of the affair, roused the townsfolk to lively interest and made it a gay community picnic with a raft of junketeers accompanying the team to Ossining.

Way of a Maid With a Man

It was a huge success. There was a lunch inside the walls, some impromptu entertainment, as much fraternizing with the resident players as the rules would permit, and a game played

in the highest, friendliest spirits possible. Joe got four for four and was everybody's hero, boss lion of the den. His bride was never so proud and happy.

Six months later, Joe came home from work to an empty house. No bride, no supper, no note propped against the pink-shaded lamp in the living room. He scoured the neighborhood. No Mrs. Joe. He canvassed all their friends and all hers and all his. Nobody had seen her. And she didn't come back.

Joe notified the cops, of course, but they learned nothing except that she wasn't in town. As gently as they could, they tried to explain it to Joe; his wife was free and over twenty-one and this sort of thing had happened before, though nobody ever would have thought it could happen to this guy and this doll.



Joe made a good game try at drowning his loneliness, but they don't distill the stuff fast enough for a job of such proportions. He had no heart for games and he quit them all, boxing, baseball, football. At long last a letter came.

"Dear Joe," it read in effect. "It's hard for me to write this, but that day at Sing Sing I found my ideal. He was their leftfielder, dear."

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PROTO'S



ADJUSTABLE WRENCHES
PAT. PEND.

GOLDEN KNURL HOLDS EXACT JAW OPENINGS AUTOMATICALLY!

NO BUTTONS... NO LEVERS... NO GADGETS

Meets Federal Specifications: GGG-W-631A, Type 1

Now Available in FIVE SIZES*

704L	706L	708L	710L	712L
4"	6"	8"	10"	& 12"

*Available soon: 16" 20"

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583 Allen St., Jamestown, N.Y.



PENDLETON
DIVISION OF
TOOL INDUSTRIES
INC.

SERVICE SUGGESTIONS

No Reverse In Torqueflite Transmission On Plymouths

It is possible under certain conditions for the outer governor weight to contact the output shaft resulting in a "no reverse" condition. This contact may create a burr on end of weight which restricts free movement of weight within bore.

With the weight held, the governor valves remain allowing pressure to be applied in the reverse blocker valve, preventing shifting the transmission into reverse even while the car is not in motion.

Should this condition occur the governor weight should be removed and examined.

If a burr is found, grind a chamfer $\frac{1}{8}$ in. (not to exceed $\frac{5}{32}$ in.) x 45 deg. on the end of the weight. This will provide clearance between the outer weight and the output shaft ramp.

A change is being made in the output shaft to provide sufficient clearance under all conditions.

Oil Distributor Tube Position In Output Shaft

On B-W type transmissions no rear clutch application or any automatic upshift despite the fact that the control pressure and all adjustments are normal, can be caused by shifting of the distributor tube in the output shaft. Shifting of the tube, depending on the direction, may obstruct or not confine the governor and clutch pressures to their respective passages. Furthermore, inspection of the governor, control and pressure valves, front and rear clutch operating parts, and all sealing

rings may indicate that all these parts are normal.

Dependent on how the tube has shifted the following conditions may occur:

1. No governor action, in which case the transmission would not upshift automatically.
2. Obstruct the rear clutch passage, in which case the transmission would not provide third gear or reverse.
3. Allow a common passage to supply pressure to both front and rear clutches simultaneously, in which case a locking condition will exist in D, L, or R range.

How to Position

The correct position of the tube within the output shaft can be determined as follows: with the output shaft out of the transmission locate the governor drive ball pocket in the shaft. Then, looking at the front of the output shaft assembly, locate the elongation of the oil passage in the center of the distributor tube. Using the governor drive ball pocket as a reference point, the elongated portion of the passage should be located 180 degree from governor drive ball pocket.

Lubricating Sure-Grip Differentials

Sure-Grip differentials should be lubricated with special Sure-Grip lubricant, available from Chrysler Corp. Service Parts and Accessories Supply Div. If a noise condition should be encountered such as a chatter, knock, growl, or whine, drain the differential and replace with special Sure-Grip lubricant.

Engine Will Not Start After Being Re-assembled

It has been reported that in some cases after re-assembling a 350 or 361 cubic inch Dodge engine, the engine will not start. Examination shows that the push rods appear to be $\frac{1}{8}$ inch too long, holding the valves partially open.

Inverted Push Rod

This condition results from installing the push rod in an inverted position. The top—or roder arm—end of the rod is approximately $\frac{5}{16}$ inch diameter. The lower—or tappet—end of the rod is $\frac{1}{4}$ inch diameter as is the seat in the tappet.

When the push rod is installed upside down, the large end of the rod will not seat in the tappet and rides instead on the top of the plunger increasing the effective length of the rod by $\frac{1}{8}$ inch.

1957 Engine Idle Speed Adjustment

The hot engine idle speed on 1957 Hydra-Matic equipped cars should be set with the transmission in Drive range. The idle speed specifications are as follows:

Idle Speed in Drive
All Hydra-Matic Except
Air Conditioning

430 — 450 RPM

All Air Conditioning

500 — 520 RPM

Note: Idle speed should be set on Air Conditioned Cars with Air Conditioning off.

Synchro-Mesh transmission equipped cars will continue to be adjusted 450 — 470 RPM.

only

INTERNATIONAL PARTS MUFFLERS

have exclusive patented

"CONTRA-MATIC"

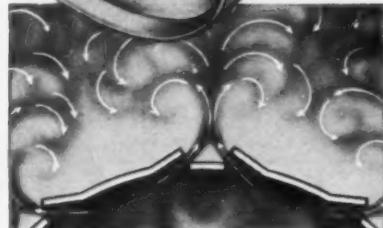
SELF CLEANING LOUVRES

U.S. PAT. NO. 2343152

**to assure quietness
with minimum back
pressure even
after years
of use!**

**This feature—plus
many more—guarantees
top customer satisfaction**

Exclusive, patented CONTRA-MATIC self-cleaning louvres assure continuous peak operating efficiency. But this is only one of the many features that make International Parts Mufflers quiet, efficient, long-lasting. Extra heavy steel, double-wrapped construction, continuous welded seams, all-welded internal baffles provide lasting strength. Special beaded body gives extra rigidity, "Silikote" coating offers rust and corrosion protection. Good engineering backed by careful research, through testing and inspection in every step of production—all these combine with exclusive, superior design to pay off BIG in sales appeal and user satisfaction. **INTERNATIONAL PARTS MUFFLERS ARE BACKED BY A WRITTEN LIFETIME GUARANTEE.**



**"Contra-Matic" self cleaning louvres
keep mufflers operating at peak
efficiency year after year**

Gases passing through CONTRA-MATIC louvres are directed toward each other to break up noise sound waves. Consequently, each louvre is continually being blown clean by the action of its contra louvre. The result is a muffler that provides constant super-silencing with lowest possible back pressure.



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Make \$26

Black & Decker gives prove you'll make big

Your profit can reach \$10.50
an hour on an investment of
as little as \$9.60 a month!

Here's an offer you can't afford to pass up. Just for the chance to demonstrate the Black & Decker Automatic Polisher—and start you on the road to big profits—we'll give you enough Black & Decker

Super Vitri-Glaze Polish to make \$26 clear profit!

Men just like you are now making \$13 a car profit on polish jobs without special bays or areas set aside for the work! Look at the chart below—then, send the coupon for your free polish profits and a demonstration of the finest polisher you ever handled! You must act fast, though—this offer is being made for a limited time only! THE BLACK & DECKER MFG. Co., Dept. 5105, Towson 4, Md. (In Canada: Brockville, Ontario.)



Black & Decker®

Quality Electric Tools—Power-Built for top performance

This colorful Saturday Evening Post ad plus full-color window display and banner attract your customers to you for the finest polish job under the sun!

Here's proof there is no service you can offer that makes more money for you—day in, day out, regardless of season!

NO OTHER INVESTMENT CAN GIVE YOU SUCH BIG RETURNS!

EQUIPMENT*	LUBE RACK	WHEEL BALANCE	BATTERY CHARGE	B&D AUTOMATIC POLISHER
Hourly Profit	\$1.50	\$1.25	.33	\$6.00
Investment	\$1,000.	\$325.	\$250.	\$115.00
Hours to pay off	667	260	758	19-1/6

*Average Figures

at our expense! you FREE polish to let us profits in car polishing!



Save as much as \$31.50 on a complete PoliShop! B&D Heavy-Duty Automatic Polisher, with patented automatic feature, plus two bonnets; 4 gallons of New Super Vitri-Glaze with exclusive Color Guard—the magic ingredient that protects finishes against sun fading. All stow away in your PoliShop cart!



**Act FAST! Offer made
for limited time only!
Mail coupon today—
for your FREE polish!**

(Offer valid in U.S.A., Alaska, Hawaii, only.)

THE BLACK & DECKER MFG. CO., Dept. 5105, Towson 4, Md.

- I like extra profits! Rush free polish and demonstration.
 Please send me additional literature.

Name _____ Title _____

Company _____

Address _____

City _____ Zone _____ State _____



1958 Tune-up—Alignment Specifications

MAKE AND MODEL	ENGINE		TUNE-UP DATA												FRONT END ALIGNMENT		
	No. of Cylinders Bore and Stroke (In.)	Maximum Brake H.P.	VALVES				IGNITION				Steering Axis Inclination (Deg.)	Caster (Deg.)	Camber (Deg.)	Toe-In (In.)			
			Spark Plug Make and Size (mm)	Inlet (Deg.)	Seat Angle	Operating Tappet Clearance	Inlet (In.)	Exhaust (In.)	Breaker Point Gap (In.)	Cam Angle (Deg.)							
AMERICAN MOTORS CORP.																	
Rambler.....	6-5801	6-3½x4½	90	ACA-14	45	45	.016C	.018C	.016	32	.035	3B	8	1½N to 1½P	0 to 1½P	½ to ¾	
.....	6-5810	6-3½x4½	127	CA-14	45	45	.012H	.016H	.016	32	.035	5B	6 11'	0 to 1½P	1½N to 1½P	½ to ¾	
.....	8-5820	8-3½x3½	215	CA-14	45	45	.012H	.014H	.016	30	.035	5B	6 11'	0 to 1½P	1½N to 1½P	½ to ¾	
.....	8-5860	8-4x3½	270	CA-14	30	45	Hyd	Hyd	.018	30	.035	5B	6 11'	0 to 1½P	1½N to 1½P	½ to ¾	
CHRYSLER CORP.																	
Chrysler.....	8-LC1-L	8-3½x3½	290	AL-14	45	45	Hyd	Hyd	.017	30	.035	6B	6 1½	0 to 1½N	0 to 1½P	½ to ¾	
.....	8-LC2-M	8-3½x3½	310	AL-14	45	45	Hyd	Hyd	.017	30	.035	6B	6 1½	1½N to 1½P	0 to 1½P	½ to ¾	
.....	8-LC3-H	8-4x3½	345	AL-14	45	45	Hyd	Hyd	.017	38	.035	6B	6 1½	1½N to 1½P	0 to 1½P	½ to ¾	
.....	8-LC3-S	8-4x3½	380	AL-14	45	45	.015H	.024H	.017	38	.035	6B	6 1½	1½N to 1½P	0 to 1½P	½ to ¾	
De Soto.....	8-LS1-L	8-4½x3½	280	AL-14	45	45	Hyd	Hyd	.017	30	.035	6B	6 1½	0 to 1½N	0 to 1½P	½ to ¾	
.....	8-LS2-M	8-4½x3½	295	AL-14	45	45	Hyd	Hyd	.017	30	.035	6B	6 1½	0 to 1½P	0 to 1½P	½ to ¾	
.....	8-LS3-H	8-4½x3½	305	AL-14	45	45	Hyd	Hyd	.017	30	.035	6B	6 1½	0 to 1½N	0 to 1½P	½ to ¾	
.....	8-LS3-S	8-4½x3½	345	AL-14	45	45	Hyd	Hyd	.017	38	.035	6B	6 1½	0 to 1½N	0 to 1½P	½ to ¾	
Dodge.....	8-LD1-L1, LD1-L2	8-3½x4½	138	AL-14	45	45	.010H	.010H	.020	39	.035	2B	6 1½	0 to 1½P	0 to 1½P	½ to ¾	
.....	8-LD2-L1, LD2-L2	8-3½x3½	252	AL-14	45	45	Hyd	Hyd	.017	30	.035	6B	6 1½	0 to 1½P	0 to 1½P	½ to ¾	
.....	8-LD2-M	8-3½x3½	265	AL-14	45	45	Hyd	Hyd	.017	30	.035	6B	6 1½	0 to 1½P	0 to 1½P	½ to ¾	
.....	8-LD3-L, LD3-S	8-4½x3½	295	AL-14	45	45	Hyd	Hyd	.017	30	.035	6B	6 1½	0 to 1½P	0 to 1½P	½ to ¾	
.....	8-LD2 & LD3, D-500 Package	8-4½x3½	305	AL-14	45	45	Hyd	Hyd	.017	30	.035	6B	6 1½	0 to 1½P	0 to 1½P	½ to ¾	
Imperial.....	8-LY1-L, LY1-M, LY1-H	8-4x3½	345	AL-14	45	45	Hyd	Hyd	.017	38	.035	6B	6 1½	0 to 1½P	0 to 1½P	½ to ¾	
Plymouth.....	8-LP1-L, LP1-M, LP1-H	8-3½x4½	132	AL-14	45	45	.010H	.010H	.020	39	.035	2B	6 1½	0 to 1½N	0 to 1½P	½ to ¾	
.....	8-LP2-L, LP2-M, LP2-H	8-3½x3½	225	AL-14	45	45	.012H	.018H	.017	30	.035	10B	6 1½	0 to 1½N	0 to 1½P	½ to ¾	
.....	Golden Commando Package	8-4½x3½	305	AL-14	45	45	Hyd	Hyd	.017	38	.035	8B	6 1½	0 to 1½N	0 to 1½P	½ to ¾	
FORD MOTOR CO.																	
Edsel.....	8-57A, B: 58A, B: 63A, B: 64A, 76B 8-57A, 57B, 63A, 63B, 76B	8-4½x3½	303	Ch-18	30	45	Hyd	Hyd	.015	27	.034	7B	7	0 to 1P	1½P to 1P	½ to ¾	
.....	8-57A, 57B, 63A, 63B, 76B	8-4½x3½	345	Ch-18	30	45	Hyd	Hyd	.015	27	.034	7B	7	0 to 1½P	0 to 1½P	½ to ¾	
Ford.....	6—All	8-3½x3½	145	Ch-18	45½	45½	.019H	.019H	.025	37	.034	4B	7 7"	1½P to 1½N	1½P to 1½P	½ to ¾	
.....	8-Custom 300, Fairlane	8-3½x3½	205	Ch-18	45½	45½	.019H	.019H	.015	27	.034	3B	7 7"	1½P to 1½N	1½P to 1½P	½ to ¾	
.....	8-Fairlane 500	8-4x3½	265	Ch-18	60½	45½	.026H	.026H	.015	27	.034	3B	7 7"	1½P to 1½N	1½P to 1½P	½ to ¾	
.....	8-Fairlane 500 Option	8-4x3½	300	Ch-18	60½	45½	.026H	.026H	.015	27	.034	3B	7 7"	1½P to 1½N	1½P to 1½P	½ to ¾	
.....	8-Thunderbird	8-4x3½	300	Ch-18	60½	45½	.025H	.025H	.015	27	.034	4B	7 7"	1½P to 1½N	1½P to 1½P	½ to ¾	
Lincoln.....	8—All	8-4½x3½	375	Ch-18	30	45	Hyd	Hyd	.015	27	.032	6B	7 26'10"	0 to 1½N	0 to 1½P	½ to ¾	
Mercury.....	8-Monterey	8-4½x3½	312	Ch-18	60½	45½	Hyd	Hyd	.015	27	.034	4B	7	1½N to 2N	1½N to 1½N	½ to ¾	
.....	8-Montclair	8-4½x3½	330	Ch-18	60½	45½	Hyd	Hyd	.015	27	.034	4B	7	1½N to 2N	1½N to 1½N	½ to ¾	
.....	8-Park Lane	8-4½x3½	360	Ch-18	60½	45½	Hyd	Hyd	.015	27	.034	7B	7	1½N to 2N	1½N to 1½N	½ to ¾	
GENERAL MOTORS CORP.																	
Buick.....	8-40	8-4½x3½	250	AC-14	45	45	Hyd	Hyd	.015	30	.033	5B	7	1½N	1½P	½ to ¾	
.....	8-50, 60, 70, 700	8-4½x3½	300	AC-14	45	45	Hyd	Hyd	.015	30	.033	5B	7	1½N	1½P	½ to ¾	
Cadillac.....	8-60, 62, 75	8-4x3½	310	AC-14	44	44	Hyd	Hyd	.016	30	.035	5B	4	1½N to 1½N	1½N to 1½P	½ to ¾	
Chevrolet.....	8-1100, 1500, 1700	8-3½x3½	145	AC-14	31	46	Hyd	Hyd	.019	30	.035	TC	7½	1½P to 1½P	1½P to 1½P	½ to ¾	
.....	8-1200, 1600, 1800	8-3½x3½	185	AC-14	45	45	Hyd	Hyd	.019	30	.035	4B	7½	1½N to 1½P	0 to 1P	½ to ¾	
.....	8-1200, 1600, 1800	8-4½x3½	250	AC-14	45	45	Hyd	Hyd	.019	30	.035	4B	7½	1½N to 1½P	0 to 1P	½ to ¾	
.....	8-887	8-3½x3½	230	AC-14	45	45	Hyd	Hyd	.018	29	.035	4B	4	2½P	0 to 1P	0 to 1P	
Oldsmobile.....	8-68	8-4x3½	265	AC-14	45	45	Hyd	Hyd	.016	30	.030	5B	7	0 to 1N	1½N to 1½P	0 to 1½	
.....	8-S88, 98	8-4x3½	305	AC-14	45	45	Hyd	Hyd	.016	30	.030	5B	7	0 to 1N	1½N to 1½P	0 to 1½	
Pontiac.....	8-58-25, 58-27, 58-28	8-4½x3½	240	AC-14	30	45	Hyd	Hyd	.016	30	.036	6B	4½	0 to 1N	0 to 1P	0 to 1½	
.....	8-58-25, 58-27, 58-28	8-4½x3½	255	AC-14	30	45	Hyd	Hyd	.016	30	.036	6B	4½	0 to 1N	0 to 1P	0 to 1½	
STUDEBAKER-PACKARD CORP.																	
Packard.....	8-58L	8-3½x3½	225	Ch-14	45	45	.024H	.024H	.016	31	.036	4B	6	1N to 2½N	0 to 1P	½ to ¾	
.....	8-58L-K	8-3½x3½	275	Ch-14	45	45	.024H	.024H	.016	31	.036	4B	6	1N to 2½N	0 to 1P	½ to ¾	
Studebaker.....	6-58G	6-3x4½	101	Ch-14	45	45	.016C	.016C	.020	39	.031	2B	6	1N to 2½N	0 to 1P	½ to ¾	
.....	8-58B	8-3½x3½	180	Ch-14	45	45	.024H	.024H	.016	31	.036	4B	6	1N to 2½N	1N to 1P	½ to ¾	
.....	8-58H	8-3½x3½	225	Ch-14	45	45	.024H	.024H	.016	31	.036	4B	6	1N to 2½N	0 to 1P	½ to ¾	
.....	8-58H-K7	8-3½x3½	275	Ch-14	45	45	.024H	.024H	.016	31	.036	4B	6	1N to 2½N	0 to 1P	½ to ¾	

ABBREVIATIONS

2—Left only; right, ¾N to ¼P
3—Eldorado models, 335.

AC—A. C. Spark Plug Div.
ACA—Auto-Lite, Champion or A.C.
AL—Electric Auto-Lite Co.
B—Before top center.

C—Cold.
CA—Champion or Auto-Lite.
Ch—Champion Spark Plug Co.
H—Hot.

Hyd—Hydraulic valve lifters.
N—Negative.
P—Positive.
TC—Top center.

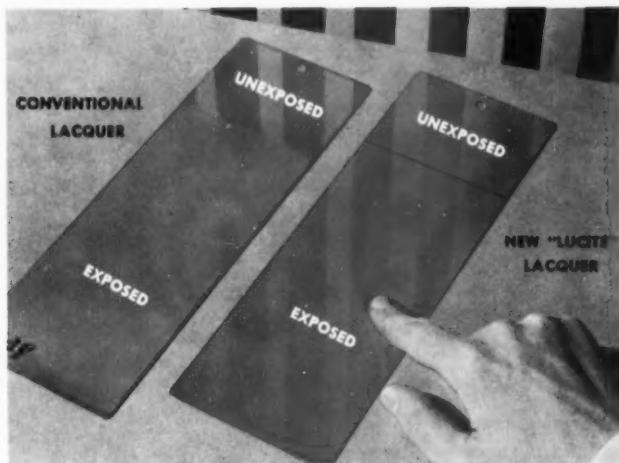


Typical parking lot subjects finishes to heavy weathering action—one reason for the growing demand for cars finished in more durable Du Pont "Lucite" acrylic lacquer.

After 18 months' exposure, car finished in "Lucite" still looks like new, with no more care than ordinary washing.



New Du Pont LUCITE* lacquer on more and more new cars now in wide range of colors for perfect spot repair



Test panels after 2 years' exposure in harsh Florida sun show remarkable gloss retention of "Lucite" lacquer as compared with conventional finishes.

To help you cash in on spot repair of the many new cars finished in new Du Pont "Lucite" acrylic lacquer, these colors are made available to your Du Pont jobber as they come out on the new cars. There are now over 60 "Lucite" colors ready for you.

"Lucite" can be applied with the equipment you now have . . . needs only to be used according to instructions to let you turn out repairs that fully match the original in color, durability and beauty.

Be ready for this rising tide of profitable new business. See your Du Pont jobber now for complete information about "Lucite."

*Registered trademark for Du Pont's acrylic lacquer

Du Pont Refinishing Materials

chemically engineered to do the job better



BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

1958 New Passenger Car Registrations by Makes by States*

STATE AND MONTH	Buick	Cadillac	Chevrolet	Chrysler	De Soto	Dodge	Edsel	Ford	Imperial	Lincoln	Mercury	Oldsmobile	Packard	Plymouth	Pontiac	Rambler	Studebaker	Mic. Dom.	For- ign	Total
Alabama	Feb. 334	90	1249	55	32	85	44	1034	15	15	90	318	2	315	242	83	22	214	4,235	
	2 Mos. 659	181	2513	112	61	204	112	2169	28	40	210	623	2	620	454	150	47	1	413	8,599
Arizona	Feb. 143	79	632	20	15	53	18	369	13	20	68	144	2	148	109	62	20	265	2,198	
	2 Mos. 269	121	1129	42	31	103	49	766	26	38	113	289	2	261	190	125	31	460	4,045	
Arkansas	Feb. 245	89	1066	34	29	125	32	1099	8	21	163	331	6	336	225	94	45	1	127	4,076
	2 Mos. 599	177	2438	80	78	300	75	2430	17	41	326	664	7	749	486	154	90	1	247	8,954
California	Feb. 1620	1257	9885	488	353	1248	306	7430	205	387	1037	2006	20	3127	1622	600	226	3	4867	36,887
	2 Mos. 3543	2499	19743	941	755	2600	171	14984	460	745	2042	4205	41	6341	3273	1574	458	3	9484	74,436
Colorado	Feb. 206	87	1023	53	37	140	49	718	9	24	123	200	3	304	205	165	23	228	3,597	
	2 Mos. 503	181	2348	134	97	331	148	1756	30	68	322	534	3	712	454	310	71	10	486	8,499
Connecticut	Feb. 218	143	1065	67	57	131	50	903	15	42	117	294	1	392	262	166	42	521	4,507	
	2 Mos. 527	303	2253	204	138	311	129	1920	46	96	245	649	14	985	548	320	98	1041	9,527	
Delaware	Feb. 61	33	390	18	17	25	11	252	3	11	35	86	1	130	64	22	12	77	1,247	
	2 Mos. 159	62	861	47	49	74	24	589	7	19	68	196	4	304	146	46	29	139	2,523	
Dist. of Columbia	Feb. 44	52	391	14	18	43	3	221	14	9	31	67	1	145	60	16	6	132	1,266	
Florida	Feb. 551	450	3110	105	60	198	120	1923	79	101	212	639	1	776	396	191	55	1012	10,055	
	2 Mos. 1353	908	7206	218	182	401	239	4820	154	251	530	1453	10	1803	905	432	131	2	2009	23,101
Georgia	Feb. 493	137	2140	99	41	268	70	1754	30	32	160	679	1	749	361	173	43	4	479	7,739
	2 Mos. 1155	343	4811	165	80	371	151	4129	37	85	383	1210	7	1118	999	220	67	8	983	16,333
Idaho	Feb. 121	53	373	21	22	55	21	296	9	20	67	126	1	138	107	102	27	141	1,700	
	2 Mos. 224	83	676	44	36	95	39	458	16	32	116	218	2	240	207	156	49	220	2,911	
Illinois	Feb. 1826	801	7114	400	309	560	252	4789	85	220	780	1964	25	1887	153	898	271	23	701	24,430
	2 Mos. 4071	113	15223	886	684	123	553	1034	244	446	1575	4639	55	4332	3306	1751	572	84	145	53,333
Indiana	Feb. 432	166	1771	78	68	153	153	23	59	207	806	11	549	343	156	2	182	1,504		
	2 Mos. 1396	534	2497	225	225	478	277	4081	89	127	603	1099	2	1527	993	463	393	6	456	18,350
Iowa	Feb. 364	129	1824	66	49	137	74	1368	9	29	195	482	2	182	402	181	42	3	106	5,547
	2 Mos. 819	244	387	176	124	313	177	3298	42	88	327	1046	5	842	831	333	126	7	341	13,036
Kansas	Feb. 250	65	1006	42	43	73	50	1049	14	24	104	214	1	274	231	90	34	1	140	3,714
	2 Mos. 822	173	2459	139	120	242	121	2179	32	55	259	609	3	646	539	237	82	1	285	8,805
Kentucky	Feb. 361	85	1337	45	31	115	59	859	5	21	155	414	8	280	262	78	24	90	4,339	
	2 Mos. 642	155	2580	87	69	198	133	1758	18	38	295	705	9	627	484	134	50	164	8,146	
Louisiana	Feb. 439	150	2301	45	40	170	73	1948	15	49	221	603	1	501	405	68	34	8	457	14,082
	2 Mos. 890	275	4408	108	87	330	153	3778	42	78	305	1088	1	960	842	113	72	8	109	1,424
Maine	Feb. 93	38	419	9	13	48	9	297	2	6	41	67	1	126	78	85	15	1	140	3,714
	2 Mos. 232	79	877	27	37	124	24	682	7	17	99	171	1	257	175	101	46	285	3,230	
Maryland	Feb. 320	115	1868	93	68	186	48	1224	21	23	153	332	3	606	302	101	41	1	304	5,637
	2 Mos. 745	242	3925	225	189	440	123	2764	62	62	316	828	5	1406	746	213	86	1	687	13,028
Massachusetts	Feb. 475	234	1884	122	107	207	67	1591	25	77	168	552	6	579	390	336	54	8	546	7,228
	2 Mos. 1031	446	3232	278	240	402	135	2962	73	140	369	1207	7	1246	801	610	95	22	967	14,263
Michigan	Feb. 1240	511	2549	196	211	591	244	4008	49	194	669	1700	7	1351	1143	553	99	6	710	18,731
	2 Mos. 2568	1278	10431	452	522	1032	747	7688	122	352	1268	3239	15	2877	2230	1012	228	11	1210	37,291
Minnesota	Feb. 827	149	2244	92	87	224	106	1779	27	46	223	728	2	593	475	315	94	1	253	8,044
	2 Mos. 1083	316	4334	187	161	426	198	3394	51	88	444	1239	7	1061	913	571	177	1	388	15,044
Mississippi	Feb. 204	60	874	21	26	63	46	760	8	15	61	244	1	223	150	35	30	1	92	2,911
	2 Mos. 403	95	1552	32	35	92	68	1365	12	19	98	395	1	301	282	48	49	1	115	4,960
Missouri	Feb. 458	206	2411	97	74	224	102	1974	24	39	235	604	6	659	433	142	86	1	304	8,078
	2 Mos. 992	355	4558	153	166	416	163	3629	58	79	397	1098	7	1262	795	255	151	1	441	15,005
Montana	Feb. 77	29	345	24	17	46	13	274	8	10	50	88	1	88	85	60	18	4	51	1,287
	2 Mos. 215	78	703	47	32	100	37	637	14	19	106	215	2	194	158	115	50	5	100	2,825
Nebraska	Feb. 231	83	1137	50	20	84	37	895	15	25	120	280	4	287	238	95	36	5	120	3,755
	2 Mos. 515	164	2047	96	52	190	83	1798	27	50	234	545	9	570	428	178	80	20	203	7,288
Nevada	Feb. 20	23	128	6	10	18	153	1	12	28	27	1	21	35	4	11	1	110	624	
	2 Mos. 41	46	259	23	19	37	33	283	3	23	47	80	3	59	76	13	28	1	167	1,240
New Hampshire	Feb. 15	12	120	1	3	17	2	100	1	1	9	11	1	35	20	29	7	57	443	
	2 Mos. 61	28	338	10	12	38	11	233	2	3	35	67	1	63	68	60	19	152	1,220	
New Jersey	Feb. 794	441	3110	266	249	494	135	2341	45	130	360	938	14	1318	762	366	91	3	976	12,853
	2 Mos. 1775	1010	6560	710	555	1076	355	4750	178	220	777	2062	29	3045	1557	756	276	3	1767	27,513
New Mexico	Feb. 128	33	493	16	33	50	16	352	8	11	75	133	2	148	109	40	26	1	92	1,788
	2 Mos. 250	60	883	44	52	87	41	696	14	29	109	225	3	239	224	82	41	1	168	3,258
New York	Feb. 1587	1034	567	515	412	945	240	4025	121	264	650	2111	27	2137	1295	574	291	17	1662	23,754
	2 Mos. 4183	1291	1440	1033	2156	719	971	406	610	1535	5523	48	5406	3221	1367	606	37	3989	57,256	
North Carolina	Feb. 427	125	1486	63	71	149	67	1572	12	25	123	435	5	384	374	125	49	1	180	5,673
	2 Mos. 912	251	293	159	155	330	116	3090	27	58	265	942	6	885	739	215	121	2	325	11,593
North Dakota	Feb. 86	16	393	26	19	42	28	365	1	6	55	133	2	116	70	49	9	39	1,458	
	2 Mos. 233	44	934	79	45	121	51	671	10	20	115	287	2	313	157	118	37	68	3,308	
Ohio	Feb. 1388	620	5483	280	311	743	216	4449	62	173	657	1543	17	1611	1161	427	159	12	706	20,016
	2 Mos. 3020	1267	11342	684	651	1556	572	8799	168	342	1415	3344	39	375	2547	828	336	54	1338	41,930
Oklahoma	Feb. 327	64	1295	38	36	93	28	957	7	21	114	331	2	340	264	98	36	14	172	4,257
	2 Mos. 596	163	2426	70	72	169	66	1860	18	48	215	621	4	610	483	173	78	15	289	7,976
Oregon	Feb. 111	60																		

Power Steering Continued from page 43

Turn the steering wheel through from one side to the other, counting the turns and noting if there is any bind. Turn the wheel back one-half the number of turns to put the ball nut at mid-point. This will be the high point of the Pitman arm sector teeth. Turn the Pitman arm adjusting screw clockwise to take out all play in the gear teeth. Install and tighten the screw lock nut. Use a spring scale to pull the steering wheel through the center position and note the highest reading. This reading as the wheel is pulled over the high spot should be between one-half and one pound. If the reading is not within the limits, loosen or tighten the adjusting screw until it is.

Power Rack Adjustment

Tighten the power rack guide cover bolts evenly. Using a spring scale to pull the steering wheel through the center point, take the highest reading. If this reading as the wheel is pulled through the center point is between one-half and one pound, one .003 in. shim should be removed from between the guide cover and the case. Continue to check and to remove shims until the scale reads more than it did for the plain overcenter adjustment but the increase is less than $\frac{1}{8}$ of a pound. If the increase is more than $\frac{1}{8}$ of a pound, be sure to add one .003 in. shim. Similarly, if the pull required was greater than that at the plain overcenter adjustment, then shims should be added one at a time until the pull required is decreased to within $\frac{1}{8}$ of a pound of that for the overcenter adjustment. Allowing for error, the total pull after all this should not exceed one and one-quarter pounds. Reinstall the unit in the car.

Pitman Shaft Adjustment

This adjustment eliminates backlash between the sector gear and the ball nut. Disconnect the Pitman arm from the steering tie rod. Loosen the Pitman shaft adjusting screw lock nut and tighten the adjusting screw to eliminate the backlash. Check that the reading on a spring

scale used to move the steering wheel through the center or high spot is between one and one and a quarter pounds. Tighten the lock nut and check that the load has not changed.

If the elimination of the backlash results in too high a reading of the spring scale, there may be a misalignment of the steering column. Loosen the mounting brackets at the dash and the frame and check the pull re-

(Continued on page 113)

you can BANK on-



Yes, you can bank on Johnson Tappets for ready-made profits. Johnson, as an exclusive tappet manufacturer, has the only complete line of tappets, giving you coverage in both mechanical and hydraulic tappets. The popular Adjustable Tappet for Ford V-8 L-Head engines has been a steady money-maker for many repair shops, and will continue to be for many years to come. Johnson Hydraulic Tappets are filling the needs of a growing market as more and more new cars are being built with hydraulic tappets.

Finally, you can bank on the customer acceptance which Johnson quality has always assured. Johnson Tappets are made under the most effective quality control known. You build a reputation for such high quality when you specify and sell Johnson Tappets—Hydraulic, Adjustable and Mechanical.

"Tappets are our business"

JOHNSON JP PRODUCTS
INC.
MUSKEGON, MICHIGAN

BODY SHOP TIPS

Locating Imperfections Before Refinishing

When straightening door or quarter panels it is difficult to see imperfections before refinishing. A quick way to see, is to brush black enamel on the damaged area. Use a scratch awl to mark imperfections. Remove paint with thinner. Continue working out panel and brushing on black enamel until desired results are obtained. Then refinish. *Raymond Lindquist, Ray's Repair Shop, Rt. 1, Highway 71, Willmar, Minn.*

Easy Way Of Brazing Nut To Cowl

I have found an easier way of brazing a nut to the cowl after the original nut has been torn out. I first take a flat washer about $1\frac{1}{2}$ inches in diameter (smaller if desired). To it braze a $5/16$ inch or $\frac{3}{8}$ inch nut, making sure that a bolt can be threaded through. Next put the washer and nut assembly over hole that has been torn out of the cowl, placing the nut part on the bottom. Then weld washer to cowl. This will eliminate tedious job of trying to restore original upper cowl nut. *William M. Ottarie, 10223 Bryson Ave., South Gate, Calif.*

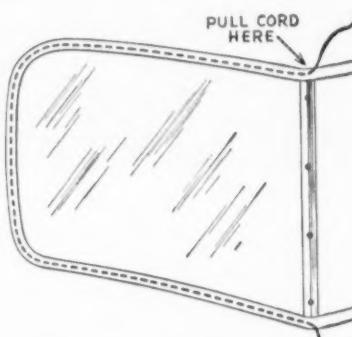
Ideal Tool For Straightening Bumpers

An old Ford "wishbone" or radius rod cut off at the ball makes an ideal tool for straightening bumpers, bumper brackets, etc. Just slip the end with

the king pin holes over the object you wish to bend and drop a pin or punch through and you can really put the pressure on. *Luther Williamson, Kirchhorfer Motor Co., P. O. Box 91, Nashville, Ill.*

Easy Way To Replace Chrome Moulding On Ford

Sometimes it is a problem to replace chrome moulding on 1950 Ford windshields. I have found an easy way to replace



this moulding. I do this by slipping a fish line cord in the windshield rubber weather strip groove and then slipping the moulding over the cord. Then I pull the cord out. *Alfred A. Cuba, City Auto & Body Works, 300 East 2nd St., Taylor, Tex.*

Protect White Side Walls When Refinishing Wheels

When painting wheels that have white wall tires; break down outer bead. Cut an old inner tube into two circles. Then lay each half over a tire and paint. This saves a lot of time and tubes can be used over and over again. *M. A. Calef, Hardin Sales & Service, Orion, Ill.*

Tool Protects Finish When Drilling Holes

I made a tool that keeps the drill chuck from scratching the paint when drilling holes in sheet or body metal. It is a drill guide made of $\frac{1}{4}$ inch strap iron, $1\frac{1}{2}$ inches wide, 8 inches long. I cement sponge rubber $\frac{1}{4} \times 1\frac{1}{2} \times 3$ inches to one side at end. Bend 3 inches from end for 5 inch handle. Drill $\frac{1}{4}$ inch hole for drill under $\frac{1}{4}$ inch. Drill $\frac{1}{2}$ inch hole for drills under $\frac{1}{2}$ inch. *Wilber Johnson, Rt. 3, Carthage, Ill.*

Welding Clamp Used As Fulerum For Pry Pick

Many times, because of the design of the car, it is impossible to use a pick hammer efficiently. To overcome this obstacle use a pry pick to get at awkward to reach parts of the automobile. The main problem when using this pick is to get the proper leverage. To do this attach a welding clamp to the fender flange, hood flange or any other convenient place and put the pry pick thru the flanges of the clamp. The rib of the clamp will then act as a fulerum so that you will be able to raise up the pry pick with force. Using this method will not only make it possible to get at those hard to reach places, but also will result in better metal work. *Joseph Goll, 1740 W. Pratt Blvd., Chicago 26, Ill.*

BODY SHOP TIPS

are worth

\$7.50

If you've developed an idea that has helped you to do body and fender work or painting better or faster, it may be worth money. Jot down the idea and, if necessary, make a rough sketch. Sometimes a snapshot will help. Just make the description of your BODY SHOP TIP clear, and if it is used, you'll receive a check for \$7.50.

Two to Chisel Continued from page 65

work has to be slighted in order to come out with a profit.

This is one means Andy uses to weed out the chislers. Those who want top work and are willing to pay for it like the way Andy operates. The others drive off... satisfied that they couldn't get Andy to chisel.

November is never a sensational month for garages. Too large a percentage of regular customers have either bought a new model, or they have just bought one of the new discontinued models.

Here is a breakdown of Andy's November business: (These figures are in round numbers)

Wheel alignments	\$425
Oil sales	250
Lube sales	76
Washing	15
Customer labor	3790
Tires and Tubes	9
Parts and Accessories	3650
Wrecker service	115
For the month, outstanding	



Andy Anderson looks at his monthly breakdown sheets held by Mrs. Anderson who keeps firm's records.

credits were \$1,285. Collections through November 29th were 1,057. This will balance out, for this difference involves 30 day accounts which are paid by the 10th of the following month.

Little Installment Work Done

Andy does very little work

which is to be paid out in weekly or monthly installments.

When we asked Andy about short cuts, he said flatly, "There are no short cuts to good work."

Andy has two hoists in his shop and all modern, time-saving tools. He has the room to expand and will double the size of his present building this spring,

ending up with an addition that will give him a shop with a 225 foot front by 32 feet deep. Right now, Andy has taken on a new mechanic to have him on tap when the new addition is completed.

Quite frankly, Andy will tell you that it's the type of customers that make or break a garage. One standard of work at fair prices—and this one price to all is the answer.

\$3,969

IN ONE MONTH

REPAIRING RADIATORS!

"My INLAND Radiator Department brought in an additional \$3,969 in a single month!" says Bob Neyland, Neyland's Paint & Body Works, Baton Rouge, La.

\$10,000 to \$20,000 a year additional volume is common! "\$16,750 in one year"—McRill's Auto Repair and Radiator Service, Twin Falls, Idaho. "\$18,000 in one year!"—Clough Auto Parts, Storm Lake, Iowa. Radiator servicing brings more profit per sq. ft. than any other activity in the service area!

20 to 30 Million Radiators Need Servicing Yearly! Tests prove 83% of all radiators over a year old are partly plugged. Inland equipment demonstrates need for radiator-cleaning—is designed for fast easy production methods—stays neat and clean.

Inland, world's largest radiator equipment manufacturer, offers the complete package—Equipment, Training, Merchandising, "Pays-For-Itself" Purchase Plan.

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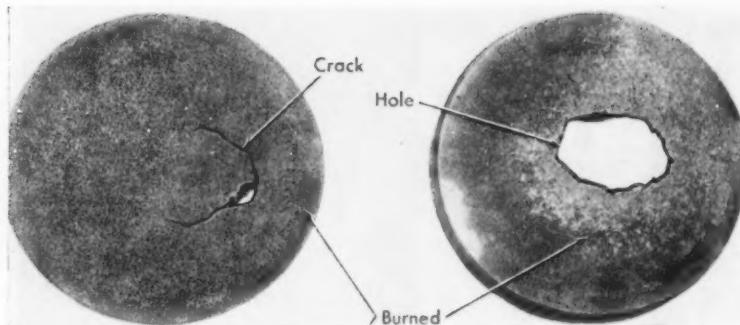
BY _____ TITLE _____

If Dealer, make of car sold _____

Are you now operating a radiator dept. Yes No

Readers' Clearing House

TROUBLE SHOOTING



High Compression Engines Demand Premium Fuel

SOME engine failures have been occurring on high compression engines due to gasoline having a too low octane rating. Engines that have the ignition timing advanced to the point of a ping are taking a chance on burning pistons or valves. A slight detonation under a light load is no problem since it indicates to the owner that he must either use a higher octane fuel or retard the timing.

Detonation that occurs at higher speeds presents a different problem. This type of detonation is not audible due to wind and road noises at higher car speeds and it is at these speeds that severe engine damage can occur if low grade fuels are used. Damage can occur to the valves and pistons due to the hammer like blows and excessive heat conditions imposed on these parts by detonation when the engine is under a load.

It is not uncommon for the head of the pistons to fracture and the valve heads to become warped and distorted. This can be prevented by recommending the proper grade of gasoline and set the ignition timing to the manufacturer's recommended settings.

Having Trouble With Automatic Chokes

I would appreciate some help on 1956 Ford and Mercury 8-cylinder with four-barrel carburetors. The automatic choke freezes or rusts so that it will not operate properly. There is so much condensation or water in the choke cap that the water just runs out and the cap cracks. They tell me that the heat tube in the intake manifold burns out. I have replaced several of these and some of them have come back in 2 or 3 months with the same trouble. I also freed up the exhaust thermostat. Is there

anything that I have overlooked? The carburetor on one of the Fords got so hot that the casting started to melt. So far I have only run into this on four-barrel jobs. Would the octane rating of the gas have anything to do with this problem?

Alphonse Tonnies
Tonnies Garage
Damiansville, Ill.

USUALLY replacing the heat tube in the manifold will take care of your problem. On some of these jobs the head gaskets may be leaking slightly, causing condensation. The fuel octane should not have any effect on the amount of heat around the carburetor. On the next one you service try running a copper tube along the exhaust manifold instead of pushing it into the well. I have seen this method work satisfactorily.

'49 Chevy Has Flat Spot During Acceleration

We have a 1949 Chevy which has the original motor in it. It has a flat spot on acceleration between 15 and 25 mph. However, you can pull the choke out about an inch and the car will pick up perfectly. We have tried to correct this condition, but so far have failed. We ground valves and installed packing on intake valves. We put in different carburetors, plugs and gaps.

PROBLEMS



by Jack Montgomery
Technical Editor

Also new distributor and rotor points and condenser. It has 19 lbs. vacuum and is steady. New fuel pump and line to tank have been installed. I jacked the car up and gas runs free from tank. Car idles perfectly and runs well at 85 mph. It does not use too much oil. The car starts OK hot or cold. Why does it still have that flat spot on acceleration after all this work?

SINCE this condition is apparent at this one critical speed, it is probably carburetion. There is a slight leanness between the low speed and high speed circuit. I would suggest installing one size richer metering rods or jets; also recheck the float level and the pump stroke.

Plymouth Stalls When Warming Up

I have two customers who each own a 1956 Plymouth V8, one with an automatic transmission and the other a standard transmission. Both customers complain about the engine dying when warming up. The engine will start OK when cold. Then when driven the engine will die 4 or 5 times until it is completely warmed up. I have repaired the carburetor, put in new plugs, points and condenser and replaced the automatic choke. I have also replaced the interrupter switch on the Plymouth with the automatic transmission. This car has 12,000 miles on it. On the Plymouth with standard transmission, I have put a new carburetor, new plugs, points, condenser and choke. This car has gone 32,000 miles. Both cars have a 2-bore carburetor.

Elvon Lorenz
San Jose, Calif.

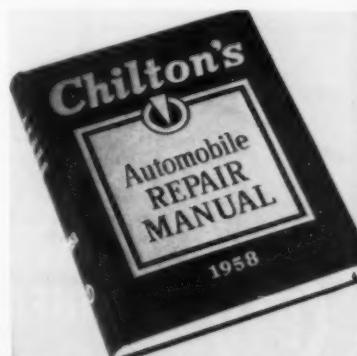
I WOULD suggest you adjust the automatic choke so it stays on longer. Also check the fast idle adjustment. Make sure the exhaust manifold heat damper is operating properly. Also check the cooling system thermostats.

'55 Buick's Carburetor Icing Up Until Warmed

I have a 1955 Buick with carburetor trouble. When the temperature is between 30 and 40 degrees the carburetor will freeze next to the manifold around the idling jets. This causes the motor to stall.

William B. Doll, Jr.
Rochester 10 N. Y.

THIS condition not only occurs on Buick but on all models. It is due to atmosphere conditions. If the heat damper is free and working properly then the only other remedy is to supply heat to the carburetor during the warm-up period. Chrysler for instance has water circulating around the carburetor.



New Products Continued from page 70

vehicle construction are also included. Parts for some models reportedly date back to 1952.

297. Special Trucks

Dodge Div., Chrysler Corp.: A 24-page catalog describing special-duty trucks has been mailed to Dodge truck dealers. It carries

information on fire trucks, concrete mixers, wreckers and other special-duty units. The company claims the catalog is merely a part of a literature shipment covering 1958 "L" Series models.

298. Wheel Alignment

Tric-Kee Tool Company: A light-

YOUR most RELIABLE CONTACT

Genuine P & D Parts

It's not just a play on words. It's the truth! Whether for Contact Sets, Coils, Regulators, Condensers, Rotors, Distributor Caps or other Ignition Parts, P & D is the brand you can rely on. Quality Controlled from raw material to finished product, expertly engineered, triple inspected — you'll get more satisfaction, more good will, more PROFIT in supplying P & D to your customers.

P & D are the Contact Sets with the Ventilated Points; angles and bushings of LE grade molded Lamitex! The result is smoother, better engine performance, less wear, longer life. You can't beat 'em!

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Established 1920
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Export Sales: Borg Warner International, 36 So. Wabash Ave., Chicago 3, Ill.

Genuine P & D Parts

weight alignment gauge is available for measuring caster and camber angles in less than 15 minutes. Designed for any size



wheel, it weighs nearly 8 ounces and requires one precision level. Accuracy at better than plus or minus $\frac{1}{8}$ -deg is reported. The tool's triangular shape eliminates the need for turntables. With an adaptor it can also measure the kingpin angle.

Ford Taunus

Continued from page 59

The riding and handling ease of the Taunus results from a combination of the MacPherson independent, front suspension and the semi-elliptic, progressive acting rear springs which adjust themselves to load and road conditions.

The front suspension employs a high-mounted coil-spring and shock absorber combination with a large tubular member extending from the lower control arm upward into a spring tower in the engine compartment.

The tubular member is a long shock absorber that is integral with the wheel spindles and rotates when the steering wheel is turned. The coil springs surround or encircle the upper half of the shock-absorber outer body. When the wheel hits a bump, the absorber body travels upward to compress the coil spring. A front sway bar also is used with this system.



*Aero-Seal
Hose Clamps
are really
out of
this world!*

OFFICIAL U.S. NAVY PHOTO
SHOWING APPLICATION OF
AERO-SEAL TO VANGUARD

BIGGEST NEWS IN HOSE CLAMPS: STANDARD AERO-SEALS HELPED

PUT VANGUARD SATELLITE IN ORBIT TO CIRCLE EARTH

AT 18000 MILES PER HOUR=

AERO-SEAL Clamps also were first under the sea on the atomic submarines, and have been used by the millions on the sea and in the air. This is impressive further proof of the *quality that has made AERO-SEAL the largest selling worm drive clamp in (or out of) the world.*



AERO-SEAL A DIVISION OF **BREEZE** CORPORATIONS, INC.

700 LIBERTY AVENUE, UNION, NEW JERSEY



Participants in IGO of Colorado's recent state convention include (left to right) R. J. Campbell, Gerald Payne, J. J. Campbell, Jr., and Clyde A. Peterson.

State Convention For Colorado Unit

The first State Convention of the Independent Garage Owners of Colorado was held at Pueblo, Colorado. Meetings were held morning and afternoon, with a banquet and dance in the evening attended by over 90 persons. Present were Frank Ormiston, past President of the Colorado Springs Unit; George Muench,

past President of the Pueblo Unit; as well as the present officers as follows: Gerald Payne, President, Pueblo Unit; J. J. Campbell, President, Denver Unit; and C. Peterson, President, Colorado Springs Unit.

Also attending were R. J. Campbell, President, Independent Garage Owners of Colorado; Beldon Blosser, Secretary-Treasurer; W. E. Whisenant, Floyd Mercure, and C. E. Fluke, Board



Members of Pasadena Unit 2 of IGO of America in attendance at a recent Grey-Rock Brake clinic sponsored by Butler & Wright of Pasadena, Calif.



Members. Thirteen couples from Denver attended the convention. The State organization now has more than 175 members.

Guest speaker for the afternoon general session was Mr. Ted Morris, of the U. S. Apprenticeship Training Office. Progress reports were made by the presidents of the three local units, and a special committee was appointed to study the possibility of bringing the 1959 National Convention to Colorado. Those appointed were W. S. Williams, Gerald Davis, and H. E. Geringer.

Quote of the Month

Every business is "big business" to the man who owns it. Much of his life's savings—sometimes all—is staked in the venture, and the risk is big to him, regardless of size.

—*"The Condenser,"*
IGO of Ohio Chapter

Youngstown Chapter

According to F. B. Smith, executive secretary of IGO of Ohio's Youngstown Unit, a motor vehicle safety demonstration was held last month. The Youngstown Unit staged the safety program in cooperation with the Youngstown Safety Council.

On display was a stripped-down car chassis, a wrecked car, and a "Traffic Tollers" display board. Also shown were numerous defective or worn-out parts that affect the safe operation of an automobile.

Qualified garagemen were on hand to explain safety hazards of cars to the public.

Spraying rocker panels is a cinch when you use a DeVilbiss Remote-Cup Outfit



Remote-Cup flexibility lets you hold the gun at any angle to spray rocker panels or other hard-to-reach surfaces easily and efficiently.

First big advance in car-finishing equipment in over a decade brings new ease, perfection to paint jobs

Now you can spray all panels, fender skirts, stone aprons, fins, and reverse curves—easily, evenly, efficiently. That's because the DeVilbiss Remote-Cup Method lets you twist, turn—even invert—the gun for the proper angle to reach any surface!

Remote Cup's exclusive five-way control balances fluid- and air-flow to assure a properly atomized wet coat for excellent flowout; to avoid orange peel, and reduce spray fog. And it handles all materials—lacquers, enamels, acrylics, primers, surfacers. Fingertip controls allow immediate pressure adjustments.

For a solution to your auto-painting problems, call your nearest DeVilbiss distributor or jobber today for a demonstration. Or, write direct for complete details.

Greater capacity of Remote Cup permits nonstop painting. And, for maneuverability in spraying broad, flat surfaces, you can point the gun at 90°—even upside down—without a drip!

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EVERY part is there in the PERMITE line

Yes, with Permite you have all needed parts in *one* line! The valves, the pistons, the pins, the bearings, the water pumps, the bolts, the suspension parts, the spring shackles . . . all the parts you need for engine or chassis overhaul are supplied in the complete Permite Line of Original Equipment Parts.

And Permite's greatly expanded production and service facilities in support of the Permite nation-wide distribution system make Permite Parts always AVAILABLE—when you want them—for all makes and models of cars, trucks, buses, tractors.

Just phone your nearby Permite Distributor.

- Valves
- Valve Guides
- Valve Parts
- Pistons
- Piston Pins
- Pin Bushings
- Cylinder Sleeves
- Sleeve Assemblies
- Engine Bearings
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- Tie-Rod Ends
- Suspension Parts
- Spring Shackles



ALUMINUM INDUSTRIES INC., Cincinnati 11, Ohio

original equipment

Permite parts

the complete engine and chassis line

Auto Clinic Continued from page 61

even higher when the customer is satisfied with the work. So far, at least, where he has trusted people for a certain percentage of their bills, the delinquencies have been negligible.

Cooperates with Stations

Auto Clinic cooperates with service stations in the area in this way. When they get problem jobs in tune up, they bring them into the shop for the expert attention required. While this may not ever be over five per cent of the jobs coming into the super service stations, Luke feels that he is not actually competing with this type of quick service, and offers his assistance whenever he can help them out of a jam.

Works with Small Truckers

In addition he works with small truckers in the area, providing competent and periodic service to keep their trucks running. These people enjoy a discount and the fact that their equipment is well maintained. As of now about 15 per cent of his work is through contract with the one- and two-truck operators, and the business is growing by leaps and bounds.

Mechanics here are good, well-

grounded men, able to work on any phase of automotive repair. They spend several years in apprenticeship at Auto Clinic (at top pay) but not until they have a good over-all understanding of the entire vehicle can they specialize. Then they have been able to work in areas best suited to their interests and abilities.

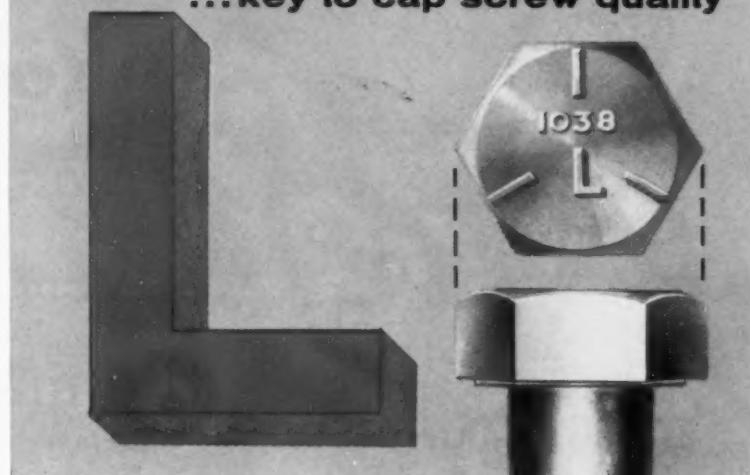
At the present time one man is a carburetor-ignition specialist; another is an automatic transmission man; another takes most of the wheel alignment jobs; though anyone on the floor is competent to handle this.

Pay Men While at School

Not many shops pay their men for going to school. But that is done here. And today you can

(Continued on page 111)

Three Radial Marks and... THE LAMSON "L" ...key to cap screw quality



Lamson
1038
Double-Heat-
Treated
Cap Screw

BEWARE when someone tries to sell you Cap Screws he claims are "just as good" as high-tensile, heat-treated 1038 Cap Screws.

To protect your reputation and, possibly, the very lives of your customers, make sure the "1038" and the three radial marks are on the heads of the Cap Screws you buy.

These radial marks were adopted by the bolt and nut industry to identify Cap Screws that meet rigid industry specifications for high-tensile strength. Like "Sterling" on silver or "14K" on gold they're your protection against an inferior product.

And as final proof of top quality, look for the "L" on the head. This identifies the Cap Screw as a genuine Lamson & Sessions 1038—the finest money can buy.



The LAMSON & SESSIONS Co.

3000 TIEDEMAN ROAD, CLEVELAND 9, OHIO • PLANTS AT CLEVELAND AND KENT, OHIO • CHICAGO • BIRMINGHAM





We select your
best prospects
out of the crowd...
persuade them
with powerful
person-to-person
advertising through
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bring them to you
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p u b l i s h e r s

431 Howard Street, Detroit 31, Michigan



For **STOP** control, sell Gabriel shock control

Give your customers maximum protection on sudden stops . . . install Gabriel shocks. Gabriel's positive control of wheels and springs eliminates dip and dive dangers . . . helps keep the car stable in emergency stopping situations. And Gabriel's positive action gives your customers a safer, more comfortable ride on rough roads, curves . . . under *any* driving conditions.

Only Gabriel's *complete* line lets you offer full-range ride control service—for any car, any type suspension . . . exclusive AjustOmatic, adjusts for soft, normal or firm ride—HydrOshox, for average driving—Silver E, for hard driving and rough roads with heavy loads—Model F Extra Heavy Duty, for trucks, buses and trailers.

Set yourself up as Gabriel Shock Absorber headquarters . . . it's the easy way to extra sales, added profits. Ask your jobber salesman for effective, colorful point-of-sale helps . . . steering wheel tags, jumbo easel display, mechanics' caps, counter cards, window posters . . . and Go Gabriel!

THE GABRIEL COMPANY, CLEVELAND 15, OHIO



Acrylic Lacquer Tips . . . Continued from page 51

the same precautions as when spraying with regular lacquer. If sprayed too wet, sags and flooding will result. When sprayed too heavy, the material will not properly atomize.

The painter should remember that acrylics can differ one from the other. Always read the manufacturer's instructions. Fol-

low them closely.

It is suggested that all materials used for this type paint be kept separate from regular synthetic or enamels. It's a good idea to use separate spray equipment if at all possible.

While acrylics are more sensitive to orange-peel than regular lacquers, when thinned

properly the material will offer no problems. The spray gun should be held about 8 in. from the work. Air pressure should be maintained at 45 to 50 lbs. pressure at the gun.

With wide-open fluid control, little tendency to orange-peel will be experienced. Here is one set of instructions used by a well known acrylic manufacturer:

In spot and panel repair the damaged area should be cleaned with a clean cloth soaked with the wax and grease remover and wiped dry with another cloth. If bare metal is exposed, the surface should be sanded with production sandpaper after cleaning with a metal cleaner. Feather edging can be done as it is with any other type surface.

The lacquer primer surfacer is thinned as per recommendations on the can and the bare surfaces are sprayed in accordance with directions. After the surface has dried properly, the surface should be sanded (wet or dry) with a fine sandpaper. Any surface imperfections should be filled with a good lacquer-base putty, and respraying of lacquer primer-surfacer and re-sanding follows.

On spot repairs the painter should compound the primer-surfacer and any scratches in the original finish surrounding the spot. Then wash off the area with synthetic reducer. Next the entire area is tacked off.

In preparing the material the acrylic lacquer color should be reduced in the proportion of 1½ parts of acrylic lacquer thinner to one part of color. Each double coat should be allowed to flash before applying successive coats. The area surrounding should be sprayed to "blend in" with the original finish on the car. Techniques of handling the spray gun itself do not vary appreciably over those required with lacquers, though the painter should be sure that the material is

(Continued on page 109)

K-D TOOLS
make hard jobs easy!

428 Hose Clamp Pliers
removes, installs all sizes wire clamps. Swivel jaws.

New 438 Window Regulator Arm Remover. For Ford-built since '52 without taking roller assemblies apart!

DOOR HANDLE TOOLS

430 for GM and Ford-built, Nash, Studebaker. Tough, thin spring steel jaws.

435 for Chrysler-built since '55. Releases clip so handle comes off.

383 Valve Spring Compressor. Handles easy, fast in use on late model valve-in-heads because Operating Handle is on back of frame. Services GM-Ford-Chrysler built. Also many L-heads if manifolds removed.

175 UNIVERSAL Cylinder Head Holder. Low price, holds all sizes, rotates heads in any position for servicing. Big value!

K-D TOOLS
K-D MFG. CO., LANCASTER, PA.

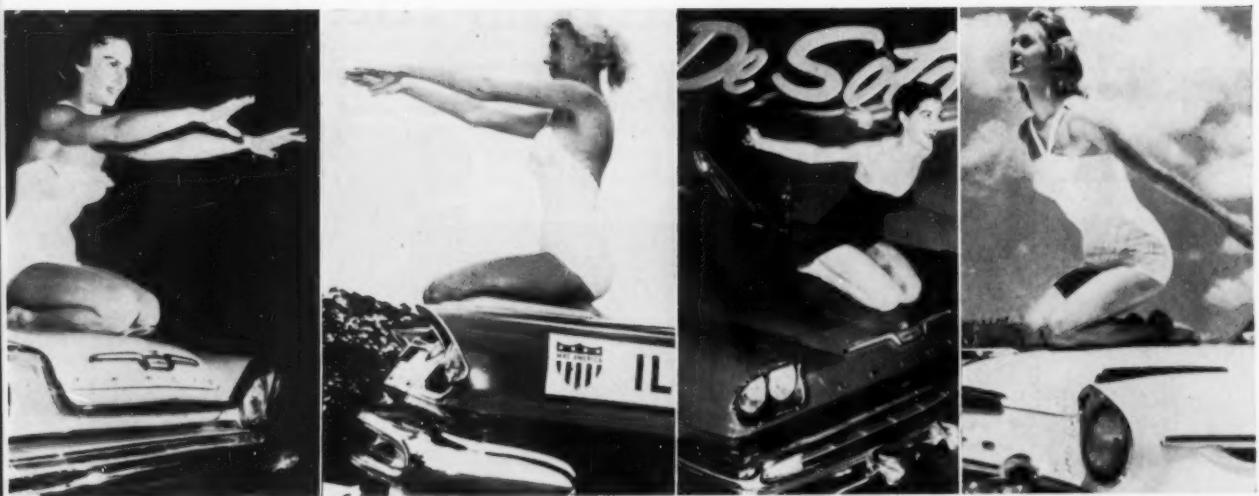
FREE CATALOG
All the K-D Tools described, illustrated in 32-page book. Write.

... Do You have the K-D BATTERY HANDLER in your Shop?
Handles all sizes, 6 and 12 volt, passenger ...

McQUAY-NORRIS makes the finest COMPLETE LINE in the world!



Distributed by the finest wholesalers in the industry
McQUAY-NORRIS MANUFACTURING CO.
ST. LOUIS • TORONTO



De Soto credits a measurable amount of its early 1957 sales rise to the attention the above hood ornaments created. Models were selected for wholesomeness, freshness of appeal; appeared on hoods of new De Sotos at automobile shows.

HUMAN EVENTS



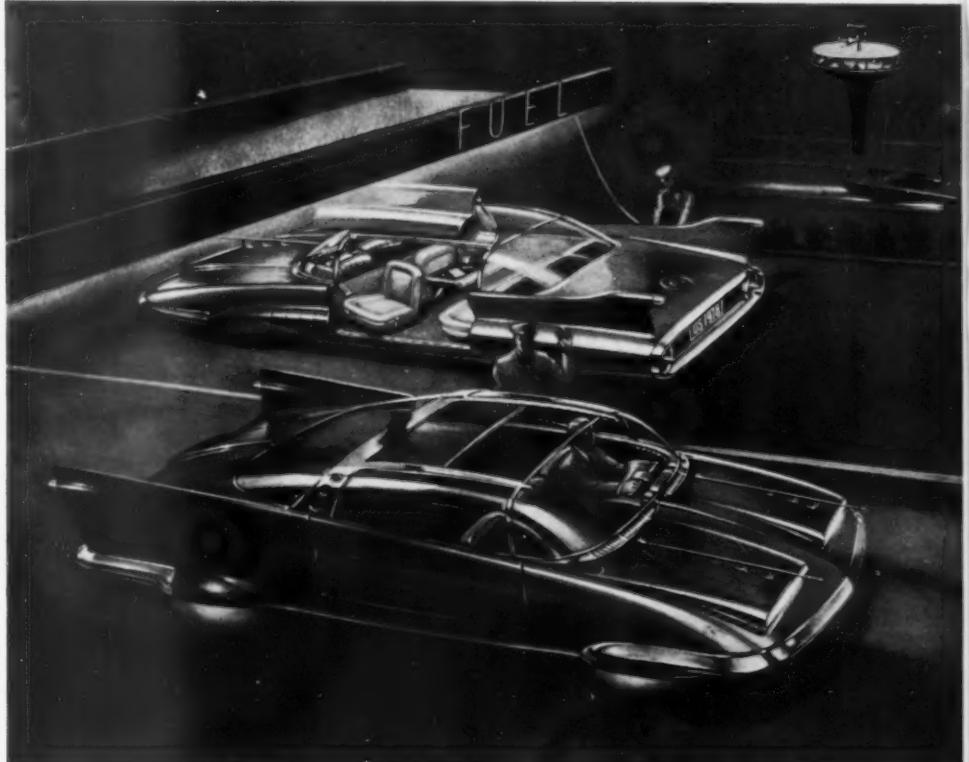
University of Pennsylvania fraternity students express bold indignation (although they seem to be enjoying it) at action taken by city police as they joyfully hang process server in effigy. Police cracked down on many students charged with flagrantly ignoring traffic summonses.

A former butler, cab driver Raymond Roma (left), has equipped his cab with electric shaver, cosmetics, cigarettes, gum.



◀ Police of Hamburg, Germany have overcome the problem of illegal parking with this formidable equipment, which permits them to quietly tow away cars without forcefully entering to release brakes.

Stylist Carl Reynolds, Detroit product designer, envisions a "wheelless" car for the future, which would run some two feet above ground propelled by ducted fans. Reynolds sees the car as capable of rising to 100 feet, making trip to Europe not a remote possibility, but he cautions against "hedge hopping."



Indianapolis Preview Continued from page 39

roadster, is to provide better handling and more speed in the turns. The trailing arm suspension is so designed as to maintain a constant tread, allowing both front wheels to tilt inboard in the turns, with positive camber action to the left and negative camber to the right.

The trailing arms are made of

heat treated steel for more rugged service, and they are exceptionally heavy and rugged. Fitting hand in hand with the lay-over engine, independent front and general brand new designing of the D-A car, is a new brake system. It was adapted for Indianapolis use by Roy Sherman, chief mechanic

for the car. According to tests made by Sherman, the new brakes are practically immune to fade, and in the event of trouble, the "biscuits" or lining can be changed in a matter of minutes during a pit stop.

Lou Meyer's Son is Mechanic

Two of the other new cars built this year by Quinn Epperly, who built the Belond car, will also use the lay-over engine installation. One, the Jones & Maley Special, is to be piloted by veteran Tony Bettenhausen, the current mileage leader at the Speedway. It is being taken care of by young Sonny Meyer, son of Lou Meyer, three-time winner of the 500 who now produces the famous racing engine.

The other Epperly-built machine will be driven by rookie George Amick, currently one of racing's hottest chauffeurs. This car is owned by Norman Demler of Niagara Falls, N. Y., who is doing some of the mechanical work himself although veteran mechanic Bob Phillip has been assigned as chief mechanic. Both of the Epperly cars are similar with the exception of a few minor suspension changes, and they are patterned after the winning Belond car.

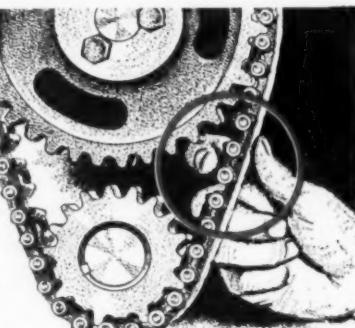
Eddie Kuzma, who built the Agajanian Special which Troy Ruttman drove to victory in the 1952 race, has readied three new cars for the 1958 Classic. One of them is an Agajanian Special which Ruttman will drive in hopes of repeating his victory.

Outstanding on all three of the Kuzma cars are the one-piece tail and fuel tanks. The one-piece units are designed to chop weight and simplify maintenance since they eliminate the use of the metal tail section covering the fuel tank. This idea was used on the Chiropractic Special which Jim Rathmann drove to second place last year. For protection against bumping in heavy traffic, the tail sections

(Continued on page 108)

TIMING TIPS

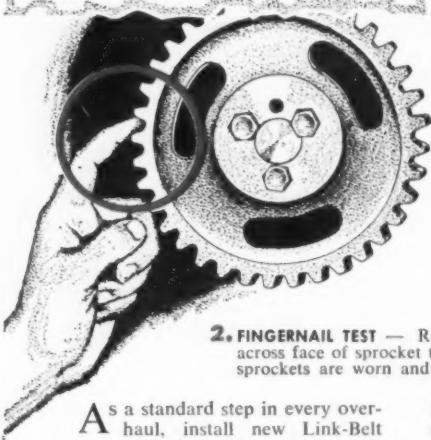
from LINK-BELT



1. FINGER-GRIP TEST — Remove timing chain cover and crank engine to get all slack on one side of chain. Using thumb and index finger, grip the slack side of the chain midway between the two sprockets. Move chain in and out toward center line of sprockets. More than a $\frac{1}{2}$ -in. lateral movement indicates worn chain.

EASY TWO-PART TEST TELLS YOU WHEN TO REPLACE TIM- ING CHAIN AND SPROCKETS

2. FINGERNAIL TEST — Run your fingernail across face of sprocket teeth. If nail catches, sprockets are worn and should be replaced.



As a standard step in every over-haul, install new Link-Belt timing chain and sprockets. It's easy while the engine is down and may be the difference between a perfect job and one that may cause trouble later.

And don't forget that the service

life of a new timing chain is shortened when it is installed over worn sprockets. Install both to prevent early timing lag that results in poor engine economy, burned valves, loss of compression, excessive oil consumption.

LINK-BELT

TIMING CHAINS AND SPROCKETS

LINK-BELT COMPANY: 220 S. Belmont Ave.,
Indianapolis 6, Ind.
Offices in Principal Cities. 14,700

Be sure to install *Link-Belt* timing chain and sprockets — world's finest original equipment line — available in sizes for every engine designed for timing chain.

Glideair Vehicle Discussed

The principle of "levitation" for future, high-speed ground transportation of from 200 to 500 miles an hour was demonstrated recently at Ford Motor Company's Research and Engineering Center.

Andrew A. Kucher, Ford's vice president—Engineering and Research, foresees the day when the wheel will have reached its top speed capabilities. He unveiled the successor to the wheel—the "Glideair." It's a wheelless vehicle. Glideair rides on a thin film of air, a fraction of an inch above the roadbed.

Instead of wheels the Glideair employs "levapads." Kucher coined this word. Tiny jets of air stream through holes in the "levapads." This supports the vehicle. As early as 1928 Kucher proposed that vehicles could slide at high speeds using air as a lubricant.

"We look upon the Glideair as a new form of high-speed land transportation, probably in the field of rail surface travel, for fast trips of distances of up to about 1,000 miles," Kucher said.

He added that he does not foresee the end of the wheel for transportation tasks such as those performed by today's cars and trucks. Nor does he see automobiles ever approaching speeds that would make wheels obsolete.

"Our calculations show that it would require considerably less power to drive the



Artist's conception of what a future wheelless Glideair vehicle might look like.

Glideair at speeds above 150 miles an hour than would be needed to move a wheeled vehicle," he said. "Since the Glideair is propelled by reaction, a gas turbine or turbojet engine would supply the power to both levitate and propel it."

"One possible application of the Glideair might be on rails," Kucher added. "The overhead monorail principle is ideally suited. Levapads already have been designed to fit around a standard rail. They not only raise the vehicle from the rail but also hold it away from the rail sides."



THROW NEW LIGHT ON GARAGE OPERATING EFFICIENCY

CHANGE TO

Cordomatic



DROP LIGHT REELS

Available in
20', 30' & 40'
cord lengths

A standard in garages and service stations everywhere, the Cordomatic Drop Light Reel outlasts a dozen drop cords, saves mechanics' valuable time, is low in cost.

Mounts easily on wall or ceiling, locks and releases at any desired length. Works like a window shade.

Send for free brochure and dealer price sheet.

CORDOMATIC, Dept. "A"
17th & Indiana Ave., Philadelphia 32, Pa.

Name _____
Firm _____
Address _____
City _____ Zone _____ State _____
Your Jobber _____



Indianapolis Preview . .

Continued from page 106

are guarded by a bumper made of heavy tubing. Bumper extends around lower portion of the tail.

The ever popular Novis, considered the fastest cars at the Speedway with their supercharged V-8 engines, have undergone some major changes during the winter. Undoubtedly

they will be heavy favorites again this year. Plagued by a series of mechanical ills through the years, these two low slung brutes have never won at Indianapolis despite their almost fantastic speed.

Formerly front-drive cars, they were converted to rear drives two years ago and the change seems to have been for the better. Last year, with Paul Russo driving, one of the cars finished in fourth position. Its teammate, handled by Bettenhausen, placed fifteenth. Russo was bothered somewhat with handling trouble in the 1957 race but suspension modifications during the winter have been designed to eliminate this for the coming race. Russo will again be at the wheel of one Novi; the other probably will be driven by big Bob Veith.

Piston displacement for 1958 remains the same as last year and stands at a maximum of 256 cubic inches for non-supercharged cars, and 171 cubic inches for blown engines such as the Novi. It is doubtful whether Hanks' 135.601 mph record for the 500 miles will be equalled or surpassed this year. Yet there is strong indication that the 146 mph record for one lap, set in 1956 by Pat Flaherty when the maximum displacement was 270 cubic inches, will be in jeopardy.

Entries for This Year's "500"

CAR	DRIVER'S NAME	CLOCKER'S COMMENTS
D-A Lubricant Special.....	Johnny Thompson	can take it
D-A Lubricant Special.....	Eddie Sachs	.....
Ansted Rotary Special.....	Jimmy Bryan	heavy favorite
Belond A P Special.....	Jerry Unser	newcomer
Chapman Special.....	Dick Rathman	good entry
Bryant Heating Special.....	Dutch Schaefer	good in midgets
Wolcott Special.....	Rodger Ward	reliable
Demler Special	George Amick	newcomer
Bowes Seal Fast Special.....	Bob Veith	good driver
Bowes Seal Fast Special.....	Johnny Boyd	consistent
Sumar Special.....	Pat O'Connor	among top five
Sumar Special.....	Marshall Teague	good entry
Sumar Special.....	A. J. Foyt, Jr.	.....
Dean Van Lines Special.....	Troy Ruttman	must pass test
Agajanian Special.....	Elmer George	one to watch
Hoover Motor Exp. Special.....	Al Herman	1957 sprint champ
Jim Robbins Special.....	Johnny Tolan	another try
Greenman Casale Special.....	Al Keller	good combination
Bardahl Special.....	Paul Goldsmith	consistent
City of Daytona Special.....	Jimmie Reece	could surprise
John Zink Special.....	Pat Flaherty	be in the money
John Zink Special.....	Jud Larson	1956 winner
Hoyt Machine Special.....	Gene Hartley	maybe
Sciavi & Amos Special.....	Eddie Russo	good driver
Chiropractic Special.....	Tony Bonadies	likes the track
Leader Card Special.....	Jim Rathman	good in midgets
Hopkins Special.....	Jimmy Daywalt	always close
Helsel Special.....	Tom Pistone	.....
Federal Eng. Special.....	Bob Christie	knows the track
Federal Eng. Special.....	Bill Homeier	newcomer
Federal Eng. Special.....	Dempsey Wilson	third attempt
Kurtis Kraft Special.....	Freddie Agabashian	.....
Hall-Mar Special.....	Tony Bettenhausen	speedy
City of Memphis Special.....	Johnnie Parsons	should go good
Gerhardt Special.....	Jack Ensley	good qualifier
McNamara Special.....	Don Edmunds	be close
Anstedt Rotary Special.....	.....	will share in purse
McKay Special.....	Len Sutton	.....
Joe Langley.....	Jack Turner	must pass test
Dayton Steel Foundry Special.....	Rex Easton	second attempt
Central Excavating Special.....	Leroy Warriner	.....
Massaglia Hotels Special.....	Joe Giba	first attempt
Dunn Engineering Special.....	Paul Russo	is fast
Wyandotte Tool Special.....	.....	newcomer
Safety Auto Glass Co. Special.....	Bud Clemons	first time
Carl Anderson Special.....	Ray Crawford	must pass test
Novi Automobile Air Cond. Special.....	Don Freeland	can take it all
Novi Automobile Air Cond. Special.....	.....	.....
Sorenson Special.....	.....	be trying
Mequiar's Mirror Glaze Special.....	.....	third try
Bob Estes Special.....	.....	be in first five
McKay's Bull Dog Special.....	.....	.....
Watson Special.....	.....	.....



"Well let me put it another way . . . If it was a horse, we'd shoot it!"

Lacquer Tips . . .

Continued from page 102

properly mixed and held in suspension throughout the process.

The surfaces finished will dry in about four hours, though they can be force-dried with heat lamps in 15 minutes. After completely dry, the repaired area is compounded just as any other paint requires.

Acrylics will probably become more popular in years to come, though there is no indication that this type material yet answers all the problems inherent with automotive finishes. From the standpoint of the customer, he will find this finish offers new colors not available in regular paints especially in the high metallic surfaces. He will not need to polish as frequently as he had done with lacquers or enamels. There is less tendency to chipping and chaulking. He will find less high gloss, but the acrylics offer a satin finish that may offset this effect for many people.

Foresight is the ability to figure out what we should have done tomorrow yesterday.

The repair shop will find the material itself somewhat higher in price than lacquers or synthetic enamels. To offset this, drying time (when forced) can speed up the job appreciably over enamels and in some cases save time over lacquers.

The shop will need no more equipment and very little new spraying techniques are required.

Chief problem of the shop at the moment seems to be in recognizing the finish on the car coming in for a paint or touch-up job so that proper refinishing materials can be applied for best results.

NEW SUPER-FAST



**Works faster, cleans
better, saves
mechanics' time!**



"SUPER FAST," some call it. "ULTRA FAST" or "EXTRA FAST," others say. But no matter how you describe it, you'll agree—new SPEEDCLENE† cleans metal parts faster than ever before possible!

It removes grease and oil—dirt and carbon—ethyl stain and even paint—in record time—without

harm to metal. No scrubbing or scraping! Saves labor . . . saves time!

Here, in one premium cleaner, you find the complete answer to your metal cleaning problems. Fast! Safe! Positive! Nontoxic! You know it's good because it's made by the makers of—

†TRADE MARK

**METAL
CLENE***

A cold-immersion cleaner with physical action for general-purpose cleaning of metal parts in its own container, tank or vat.



**E-CON-O
CLENE***

A multi-purpose concentrate which can be brushed on, sprayed on, or used in a tank for economical cleaning of parts, floors and equipment, etc.

*REG. U. S. PAT. OFF.

BENDIX PRODUCTS DIVISION SOUTH BEND IND.



This idea saves stocking seven different tubeless tire valves

SCHRADER SLASHES INVENTORY!

You can keep it simple when it comes to tubeless tire valve needs . . . and match all the tires you have in stock to *any* car model that comes in! Schrader offers two combinations that let you cut tire valve inventory to the bone. Take your choice. Ask your supplier for the one you need and be ready to match your tire stock to any car.

INVENTORY SAVER THAT FITS ALL CARS: #990 combination, #413R Valve for .453" and #54 Valve for $\frac{9}{16}$ " rim holes, with #3680C or #3680G Extension.

INVENTORY SAVER THAT FITS 95% OF ALL CARS: #3640 combination, #3640K2 Valve with washers for .453 and $\frac{9}{16}$ " rim holes and #3680C Extension.

NEW TUBELESS SNAP-IN VALVE MOUNTING TOOL: For all tubeless valve lengths on any rim. #992.

17" x 22" Wall Chart available to purchasers of either of these two boxes

Schrader®
a division of SCOVILL

A. SCHRADER'S SON • BROOKLYN 38, N. Y.
Division of Scovill Manufacturing Company, Incorporated

FIRST NAME IN TIRE VALVES

FOR ORIGINAL EQUIPMENT AND REPLACEMENT

Auto Clinic Continued from page 99

count as many as eight diplomas on the walls of the repair area. Every man in the shop has been to a service school somewhere. These may range from evening courses to even week-long sessions, but Banks feels that investment in men is a major asset to a small shop.

Some of the courses mastered include the Sun Electric School, Carter Carburetor, Holley Carburetor, Rochester Carburetor, GM Transmission, Electric Auto-Lite, Leece Neville, Perfect Circle. Whereas many shops apparently fail to train their men because of the chance of losing them, Auto Clinic feels that if men are properly paid, they will not be lost to other industries. Besides, these men like to work here . . .

Accurate and honest estimates of work required on customers' cars has been instrumental in providing a confidence that nurtures come-backs. These mechanics take a careful diagnosis of the cars that come in, and they can estimate repair costs within ten per cent accuracy. Thus a man can be assured that bills won't run up while he is waiting for the job. At times, when costs will run above that, or when extra work is found after tearing into the job, permission is always obtained from the customer before proceeding with what needs to be done.

In the case of older cars, or where customers specify that they do not want major work done, the company takes this into consideration, thus salvaging as many parts as possible. Luke feels that many times new parts are installed by shops when they are not competent to judge the condition of the old. He feels that diagnosis of condition of units is part of the job of repairing an automobile and tries whenever possible to keep the

amount of new units down where the customer does not feel he wants a complete job. Even so, Auto Clinic guarantees work within limits and will stand back of any job sent out of the shop. This sort of consideration has retained a great many customers who might otherwise have tried the do-it-yourself system and

stayed away in droves.

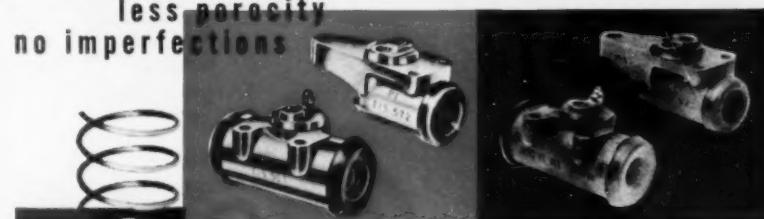
Good shop equipment, next to good men, is a prerequisite to good work, Luke says. Whenever a salesman can prove that a new shop instrument will save time, or money, or result in a better job, the sale is automatic. The company is always ready to try new ideas and new methods of doing things, and this, with up-to-date tools and equipment,

(Continued on page 117)

NEW SHELL-MOULDING PROCESS OF CYLINDERS *makes them better!*



close grain finish
less porosity
no imperfections



Write for Catalog

Now, EIS brings you better master and wheel cylinders with its new, Shell-Moulding process! They're precision-made to the extreme and accurately machined with a mirror-like internal finish. Some EIS Master and Wheel Cylinders are available in this new process — many others will follow soon. You'll find that they're made better — look better — and, they cost no more!

EIS "E" Series HRC* CUPS WITH EXPANDERS are incorporated in all EIS Wheel Cylinders. Cups are moulded of a specially formulated heat-resisting compound to withstand higher brake drum temperatures caused by higher speeds and faster stops. They are also included in all EIS Wheel Cylinder Repair Kits.

And, for a better sealing job, EIS RIBBED SECONDARY CUPS are incorporated in all EIS Master Cylinders. You'll also find them in all EIS Master Cylinder Repair Kits.

*Heat Resisting Compound

EIS AUTOMOTIVE CORP., Middletown, Conn.



"DURN ! THAT'S A TIGHT ONE."

Power Steering

Continued from page 89

quired at the center high point. If the reading is now within the limits, use shims where needed to hold the column and the steering gear box aligned.

Steering Control Valve Adjustment

Remove the steering column jacket. Remove the steering coupling screw. Insert the tool thru the screw hole and into the hollow worm shaft so that the slotted end engages the end of the control valve (spool valve) rod. With the engine running and using a torque wrench on the Pitman shaft nut, measure the torque required to turn the Pitman shaft each way from center. Turn the tool to adjust the valve so that the torque is the same in either direction plus minus $2\frac{1}{2}$ lbs.

Classified Advertisements

Salesmen wanted to call on service stations and garages with line of mufflers and tail pipes. Lowest prices, high commissions. Big money maker. Peerless Muffler Corp., 2001 S. Michigan, Chicago 16, Illinois.

DISTRICT SALES MANAGER... BULK MILK COOLERS... NATIONALLY KNOWN MANUFACTURER OF ICE BANK BULK COOLERS NEEDS MEN TO COVER TERRITORIES IN NEW YORK STATE, WESTERN PENNSYLVANIA AND OHIO. THESE ARE THE BEST POTENTIAL SALES AREAS IN THE COUNTRY. FOR MEN WHO REALLY WORK, OUR PROPOSITION WILL PROVIDE A MUCH BETTER THAN AVERAGE INCOME. WRITE US IN CONFIDENCE ALL ABOUT YOURSELF—EXPERIENCE, AGE, MARITAL STATUS, CAR, ETC. ADDRESS BOX 7 CARE OF MOTOR AGE, 5601 CHESTNUT ST., PHILADELPHIA 39, PA.



Chrysler Sector Shaft Adjustment

Loosen the locknut, then with the cross shaft on center, tighten the cross shaft adjusting screw until the backlash just disappears. From this position turn the screw in $1\frac{1}{4}$ turns. Hold the screw in place and tighten the locknut.



"We absolutely, unconditionally guarantee it to pump gas for as long as it works."

Willys Engine

Continued from page 45

the front end of the chassis through a tubular member which extends from front to rear. A Hoof velocity type governor is used for limiting top speed.

As seen in the longitudinal section, the engine is fitted with an Auburn singleplate clutch having a nominal diameter of 6.50 in. Rusco 1910G lining material 0.117-.123 in. thick is used, the effective area being 34.00 sq. in. Rated torque capacity is 36-410 lb. ft.

The engine is compact; 22-in. overall length; 20-in. overall width; and 15-in. in height. It weighs only 138 lb. with accessories.

Herbrand TOOL
OF THE MONTH

ADJUSTS ALL BENDIX BRAKES



Mechanics asked for it—Herbrand produced it! It's an old story, but a brand new tool, specially designed for adjusting Bendix brakes on all types of cars including the low slung '58 models.

The 9 $\frac{1}{4}$ inch length gives lots of leverage, and the extra-long curved end is just right for centering on the adjusting star nut in blind locations and close quarters. No more skinned or bruised knuckles—no more wasted time! See your Herbrand jobber.

new Herbrand
TOOL CATALOG



Now ready for mailing—Tool Catalog 56—sixty solid pages of the latest and best hand tools for the professional mechanic and the specialized serviceman.

Ready-punched for any style binder, the new catalog is indexed alphabetically and by section for quick and easy reference.

Send 25c—today. You'll receive a catalog by return mail, and your name on our regular mailing list will bring you literature each month on the newest developments in Herbrand "job-matched" tools.

Herbrand Tools

HERBRAND DIVISION
THE BINGHAM-HERBRAND CORPORATION
FREMONT, OHIO

Auto Show Continued from page 63

The Coliseum's two rambling floors tastefully held the most impressive array of foreign automobiles that has been seen East of the Atlantic. Seven countries were represented (U.S., France, England, West Germany, Italy, Sweden and Czechoslovakia). Czechoslovakia was the only iron curtain member noticed, a convertible crisply named Skoda. Forgotten was the scowling rain that swept the pavement in a curtained downpour. Here, inside, wandering among the functional models of

"Britaintown" (guarded by red-coated Grenadier Guards), or pausing beside a cape-clad, white-gloved Gendarme of the Renault exhibit, the air was charged with foreign flavor.

The small, sobering, economical models were everywhere the eye roved. There was, also, a trifling of American models (Chrysler, Buick, Studebaker-Packard and Ford), which were conspicuous by their tolerable size. But, from a spectator's view, the show was understandably spiced with foreign models.

People laughed, some frowned, many stood off exercising a practiced critical eye. Over it all, the orchestra of Meyer Davis sprinkled lilting music throughout the spacious second floor, accompanied by the staccato slamming of car doors. One man ran his hand affectionately over the convertible top of a Volkswagen, turned to his female escort and exclaimed: "It has a padded top."

A little girl excitedly stood beside the new American-made Colt (54-in. high, fiberglass body, \$995), quickly fired at her mother: "Mommy, buy me one for school?"

Impeccably dressed salesmen were kept busy answering the questions that poured in from all sides; also busy writing many orders. Indeed, Jaguar's sales of its spicy new XK 150 model were described as "optimistically promising." Later, it was learned the line had sold enthusiastically. Reports of similar prosperity were recorded by West Germany's influential gathering (VW, Opel, Porsche, Goggomobile, etc.), and by the increasingly popular French lines.

Firing Order on V-8 Engines

Buick . . . 1953-58:

All Buick cylinders are numbered front to back: left bank 2-4-6-8. Right bank 1-3-5-7. Using this numbering system, the firing order is: 1-2-7-8-4-5-6-3. Distributor rotor turns clockwise.

Cadillac . . . 1950-58; Pontiac . . . 1955-58:

On all engines the cylinders are numbered from front to back: left bank 1-3-5-7. Right bank 2-4-6-8. Using this system the firing order is: 1-8-4-3-6-5-7-2. Distributor rotor turns counter-clockwise.

Chevrolet . . . all V8 models:

Cylinders are numbered front to back: right bank 2-4-6-8. Left bank 1-3-5-7. Using this system the firing order is: 1-8-4-3-6-5-7-2. Distributor rotor turns clockwise.

Chrysler, DeSoto, Dodge, Plymouth . . . all V8 models:

Cylinders are numbered from front to back: left bank 1-3-5-7. Right bank 2-4-6-8. Using this numbering system, the firing order is: 1-8-4-3-6-5-7-2. Install wires in the cap in clockwise rotation.

Edsel & Ford Interceptor Engines, Mercury 1958,

Lincoln 1958:

Cylinders are numbered from front to back. Right bank 1-2-3-4. Left bank 5-6-7-8. Using this numbering system the firing order is: 1-5-4-2-6-3-7-8. Install wires in cap in counter-clockwise rotation.

Ford V8 1950-58, Lincoln 1952-58, Mercury 1950-57:

Cylinders are numbered from front to back: right bank 1-2-3-4; left bank 5-6-7-8. Using this numbering system the firing order is: 1-5-4-8-6-3-7-2. Install wires in cap counter-clockwise.

Packard . . . 1955-58; Hudson . . . 1955-58—V8 engines:

Cylinders are numbered from front to back: Left bank 1-3-5-7, right bank 2-4-6-8. Using this numbering system the firing order is: 1-8-4-3-6-5-7-2. Install wires in cap counter-clockwise.

All Nash . . . V8 engines & Rambler, Studebaker:

Cylinders are numbered from front to back: Left bank 1-3-5-7; right bank 2-4-6-8. Using this numbering system the firing order is: 1-8-4-3-6-5-7-2. Install wires in cap counter-clockwise.

Oldsmobile . . . 1950-58:

Cylinders are numbered from front to back. Left bank 1-3-5-7; right bank 2-4-6-8. Using this numbering system the firing order is: 1-8-7-3-6-5-4-2. Install wires in cap counter-clockwise.

Change in Pace

Visitors enjoyed a momentary change of pace by sitting in on the films of Florida's Grand Prix of Endurance. One small lad eagerly snatched his father's hand, steered him away from the film over to the incomparable Rolls-Royce sedan. The father approached warily, almost with religious awe. "Gosh, Dad, why don't we buy a car like this?" the lad asked breathlessly. His father's smile froze when he spotted the \$24,982 price tag. Father and son promptly left.

Yet, this elegant car had a buyer only moments after the Coliseum first opened its doors.

It was, in summation, a splendid show. A nourishing tonic of sales interest to the car buying public.



Vernon Volland (center) executive secretary of Automobile Seat Cover Assn. of America, puts crown on Joan Kagen as "Miss Good Car Keeping of 1958." Assisting are Sander Allen (left), president of Sander Allen, Inc., and Lee Schooler, Public Relations Board president. ASCAA has set aside May 21-31 as Good Car Keeping Week.

Sales Rise For Mercedes-Benz

A 74 per cent increase since the first of the year in sales of Mercedes-Benz motor cars was announced recently by Harold Churchill, president, Studebaker-Packard Corporation.

Sales of Mercedes-Benz sedans, sports cars and convertibles rose from 460 in December to 803 in March, Churchill reported. He described the increases as progressive, with an 18 per cent gain in January over December; a 22 per cent increase in February over January; and a more than 20 per cent increase in March over February.

Ad Manager

William J. Hampton has been appointed advertising manager of Chrysler Corporation's Service Parts and Accessories Supply Division.

Hampton joined the company in 1952 as a staff member of the Conference of Business Management. The following year he was transferred to the industrial relations department as a member of the college recruiting staff, and in 1955 he became an analyst in the organization department.

Du Pont Plant To Yield "Viton"

Du Pont has revealed that a plant is nearing completion at Deepwater Point, New Jersey, which will produce a new fluorine-containing elastomer called "Viton" synthetic rubber. Company spokesmen claim no commercial elastomer equals Viton's resistance to oils and solvents at temperatures above 400 deg F.

Much of the demand for "Viton" has come from military aircraft and missiles. In fact, its largest use to date has been as seals for aircraft.

Because temperatures are increasing in commercial engines, Viton is now being considered for transmissions, brakes, instruments and pumps. Ford's new super duty truck engines are currently employing it as valve stem seals.

Your Answer to Vapor Lock

(AND Hard Hot-Motor Re-starts)

FUEL PRESSURE REGULATOR

WHAT IS VAPOR LOCK?

When your motor stalls and can't be restarted or seems to starve for fuel (particularly on a hot day), you can reasonably point the finger of suspicion at vapor lock.

Vapor lock, as its name implies, is vaporization of fuel in the fuel system, preventing the carburetor from receiving the necessary volume of liquid fuel to run your engine.

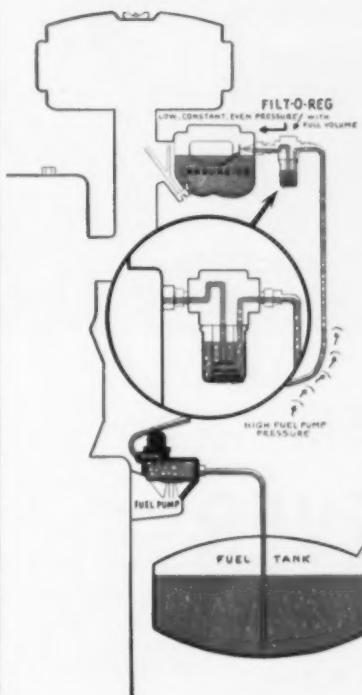
Vapor lock is caused by low fuel pump pressure and/or excessive heat in the engine area. This extreme heat may be the result of high weather temperatures, fast hard driving, pulling heavy loads, stop and go driving in traffic, high altitude driving or an inefficient cooling system. This vaporization of the fuel under heat is more apt to occur if you have purchased gas which was designed for winter or early spring use and which boils too easily in hot weather because it is more volatile.

Car manufacturers have increased the output pressures of fuel pumps. One of their objectives being to keep the fuel under greater compression in order to eliminate vapor lock. This is a step in the right direction. However, while these higher pressures do tend to reduce vaporization in the fuel line, they only increase the over-pressure problems at the carburetor needle valve and seat, which results in flooding, stalling, hard starting, rough idling and gas waste.

HOW FILT-O-REG WORKS TO STOP VAPOR LOCK... GIVE QUICKER HOT-MOTOR RE-STARTS

The installation of FILT-O-REG combined with these necessary higher fuel pump pressures is the best solution for the prevention of vapor lock and improved engine performance under all driving conditions—all speeds, loads, altitudes and extreme weather temperatures.

FILT-O-REG keeps the fuel in the line under compression, helps stop expansion and vaporization... preventing vapor lock. At the same time, FILT-O-REG reduces the over-pressure in the fuel system to a constant, unrestricted, even fuel pressure on the carburetor float valve and seat—maintaining the proper float level under all driving conditions, thus assuring the correct air-fuel ratio. FILT-O-REG controls pressure even with engine not running...giving engine quicker hot-motor re-starts.



BE SURE your customers
are ready for
happier summer driving.

INSTALL FILT-O-REG'S WITH YOUR TUNE-UP JOBS...

ORDER FROM YOUR JOBBER!

Write for Free Copies of this Bulletin #317: ALONDRA, INC., LOS ANGELES 19, CALIF.

Copyright 1958



Maple St., Small Town, U.S.A.

A TOWN WHERE “NOTHING EVER HAPPENS”...

A home town—like your town. A place where people said “it couldn’t happen to us.”

But it *did*. Like a whip, a great tornado lashed down Maple Street, splintering houses, leaving people hurt—homeless—panic-stricken.

A desperate call went out for the Red Cross and quickly, automatically, the team went into action.

Red Cross nurses slipped into uniform . . . volunteers set up first aid stations . . . canteens fed the hungry. Later, Red Cross money and work helped rebuild the town.

Last year was one of the worst disaster years of this century, and the year before, 1956, was almost as bad.

Every month and in every state, the Red Cross strained to the limit as hurricanes, floods, tornadoes, forest fires swept across the country.

Red Cross receives no government funds—depends entirely upon *you* for support. Give as much as you can. Your dollars may go to your own town when it needs them most.

Join and Serve



SPACE CONTRIBUTED BY MOTOR AGE

Chilton's MOTOR AGE, MAY, 1958

Calendar of Coming Events

Dealers Conventions

May 18-20—Texas Automotive Dealers Assn., Galvez Hotel, Galveston.
 June 8-9—Automotive Dealers Assn. of Indiana, Miroott Hotel, Indianapolis.
 Aug. 17-18—Georgia Automobile Dealers Assn., General Oglethorpe Hotel, Savannah.
 Sept. 7-8—Colorado Automobile Dealers Assn., Antlers Hotel, Colorado Springs.
 Sept. 7-9—Wyoming Automobile Deal-

ers Assn., Lander, Wyoming.
 Sept. 14-16—Michigan Automobile Dealers Assn., Pantlind Hotel, Grand Rapids

General

May 15-18—1958 National Truck, Trailer & Equipment Show Great Western Exhibit Bldg., Los Angeles, Calif.
 May 21-23—American Petroleum Institute Div. of Marketing, midyear meeting, Roosevelt Hotel, New Orleans.

May 26-27—N-A-P-A National Business

Conference, Sheraton-Fontenelle Hotel, Omaha, Neb.
 June 8-13—1958 SAE Summer Meeting, Chalfonte-Haddon Hall, Atlantic City, New Jersey.
 June 15-16—Automotive Wholesalers Association of Alabama convention, Birmingham.
 Aug. 11-14—1958 SAE National West Coast Meeting, The Ambassador, Los Angeles, California.
 Aug. 13-17—Rod and Custom World's Fair, Industrial Arts Bldg., West Springfield, Mass.
 Oct. 20-22—1958 SAE National Transportation Meeting, Lord Baltimore Hotel, Baltimore, Maryland.
 Nov. 5-6—1958 SAE National Fuels and Lubricants Meeting, The Mayo, Tulsa, Oklahoma.

**Those who do the least
always seem to have the
least time.**

Auto Clinic

Continued from page 111

keeps them well within flat rate limits for any job. Here is a case where a garage operator can save by spending, he says.

Right along with this go the shop facilities themselves. You can't expect efficient workmanship in poor working areas. In fact, you can't even expect satisfactory work when doors are dirty, or cold, or where areas are improperly lighted. Exhaust gases from running cars cut efficiency of men even though they may not be aware of it. And clean surroundings just naturally promote more accurate work. Most people know these things, but not all shops practice it.

One can eat off the floor at Auto Clinic. A floor ventilation system protects mechanics from carbon dioxide gases, and a central drain system makes for easy clean-up of stalls—a responsibility of each man.

Capitalizing on this, Luke invites the customer in to watch his men work. This brings out what might be his tenth leg of the customer relations program. When owners watch the work being performed by competent men, he says, nine times out of ten they suggest that other things be done—work that we would never get them to authorize if they were at home or in the office. . . .

PROTECT engine overhauls

MATCH YOUR OWN SKILL with a motor oil so good it helps preserve the effectiveness of your repair jobs . . . that prevents formation of both high temperature and cold engine sludge, keeps every part clean and free-acting for top efficiency and power.



always lubricate with PENNZOIL

Customer satisfaction—for keeps!

Pennzoil motor oils are refined from 100% Pennsylvania crude and blended with Z-7, the exclusive ingredient that stays active. These oils stay tough in spite of engine heat and pressure, provide control over acids and other deposits, keep all moving parts free of excessive wear—for keeps. They're a sure way to customer satisfaction—to more profitable service business!

2 GREAT MOTOR OILS!

Now . . . Pennzoil 10W-30 with Z-7, world's only oil-rich multiple viscosity oil; and famous Pennzoil with Z-7, available in all correct service grades.



**Cash in on Pennzoil acceptance! Call your nearest
Pennzoil distributor now, or write Pennzoil, Box 78, Oil City, Pa.**

Member Penn. Grade Crude Oil Assn., Permit No. 2.



ADVERTISERS' INDEX

This Advertisers' Index is published as a convenience, and not as part of the advertising contract. Every care will be taken to index correctly. No allowance will be made for errors or failure to insert.

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DeVilbiss Co.	97
Agency—Brooke, Smith, French & Dorrance, Inc.	
Dow Corning Corp.	4
Agency—Church & Guisewite, Inc.	
Du Pont de Nemours Co., Inc.	—
Finish Div.	30
Refinish Div.	87
Zerex	12
Agency—Batten, Barton, Durstine & Osborn, Inc.	

E

Echlin Mfg. Co.	—
Agency—Humbert & Jones, Inc.	
E. Edelmann & Co.	119
Agency—Burlingame-Grossman Adv.	
Eis Automotive Corp.	111
Agency—Furman Co.	

F

Felt Products Mfg. Co.	—
Agency—Hanson & Stevens, Inc.	
Ford Motor Co.	—
Agency—J. Walter Thompson	
G	—
G.M.C. Public Relation	22
Agency—D. P. Brother & Co.	
Gabriel Co.	101
Agency—Keeling & Co., Inc.	
Gates Rubber Co.	—
Agency—Harold Walter Clark, Inc.	
General Electric Co.	—
Agency—Batten, Barton, Durstine & Osborn, Inc.	
Grey-Rock Div. Raybestos-Manhattan, Inc.	14
Agency—Gray & Rogers	

H

Haviland Co., Arnold	—
Agency—Seiber Adv. Service	
Hein-Werner Corp.	—
Agency—Arthur R. Mogge, Inc.	
Heyer Industries, Inc.	—
Agency—Burke, Dowling, Adams, Inc.	
Holley Carburetor Co.	—
Agency—Horden, Chapin, Luce, Inc.	
Hollingshead Corp. R.M.	—
Agency—Gray & Rogers	
Holmes Co., Ernest	—
Agency—Acme Adv.	
Homestead Valve Mfg. Co.	—
Agency—Van Sant, Dugdale & Co.	

I

Ingersoll-Rand Co.	24-25
Agency—Beaumont, Heller & Spierling, Inc.	
Inland Mfg. Co.	91
Agency—Buchanan-Thomas Co.	
International Parts, Inc.	83
Agency—Irving J. Rosenblum Adv.	

J

Johnson Products, Inc.	89
Agency—Jacobs Co.	
Joyce-Cridland Co.	—
Agency—Weber, Geiger & Kalat, Inc.	

K

K-D Mfg. Co.	102
Agency—Andes Adv.	
Ken Tool Mfg. Co.	—
Agency—Norman Malone Assoc., Inc.	
Kendall Refining Co.	—
Agency—Barber & Drueillard, Inc.	

L

Lamson & Sessions	99
Agency—John B. Hickox, Inc.	
Lee Co., K.O.	4
Agency—Adve Adv.	
Lincoln Technical Institute	23
Agency—Humbert & Jones, Inc.	
Link Belt Co.	106
Agency—Klau-Van Pietersen-Dunlap, Inc.	
Lockport Steel Fabricators	23
Agency—E. H. Brown Adv.	
Lucas Electrical Services, Inc.	—
Agency—McCarthy Co.	

M

McQuay-Norris Mfg. Co.	103
Agency—D'Arcy Adv. Co.	
Merit Muffler Div., Goerlich's Inc.	71
Agency—Gray & Rogers	
Monroe Auto Equipment Co.	—
Agency—Aitkin-Kynett Co.	
Moog Industries, Inc.	—
Agency—Winus-Brandon Co.	

O

Oldsmobile Div. G.M. Corp.	—
Agency—D. P. Brother & Co.	

P

P & D Mfg. Co.	94
Agency—La Porte & Austin, Inc.	

P & G Mfg. Co.	—
Agency—Richard G. Montgomery & Asso.	

Paster Mfg. Co.	—
Agency—Del Wakeman Co.	

Pennzoil Div. South Penn Oil Co.	117
Agency—Fuller, Smith & Ross, Inc.	

Perfect Circle Corp.	2nd Cover
Agency—Henri, Hurst & McDonald, Inc.	

Pittsburgh Plate Glass Co.	18
Agency—Batten, Barton, Durstine & Osborn, Inc.	

Polk Co. R.L.	100
Agency—Silton Brothers-Calloway, Inc.	

Porter Inc., H.K.	—
Agency—Silton Brothers-Calloway, Inc.	

Proto Tools Div.	80-81
Agency—Willard G. Gregory & Co.	

R

Raybestos Div. Raybestos-Manhattan, Inc.	—
Agency—Gray & Rogers	

Rochester Products Div. G.M. Corp.	—
Agency—D. P. Brother & Co.	

S

Schrader's Son, A. Automotive Div.	110
Agency—G. M. Basford Co.	

Sherwin-Williams Co.	—
Agency—Fuller, Smith & Ross, Inc.	

Standard Motor Products, Inc.	—
Agency—Friend, Reiss Co.	

Stant Mfg. Co.	—
Agency—Associated Adv.	

Stewart Warner Corp. (Instruments)	—
Agency—MacFarland, Aveyard & Co.	

Sun Oil Co.	—
Agency—William Estey Co.	

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Agency—Martin Fromm & Associates	

T

Texas Co.	—
Agency—Cunningham & Walsh, Inc.	

Thermoid Co.	Back Cover
Agency—Aitkin-Kynett Co.	

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Agency—Young & Rubicam, Inc.	

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Agency—Batten, Barton, Durstine & Osborn, Inc.	

Tripple Mfg. Co.	—
Agency—Alan David Adv.	

Tung-Sol Electric, Inc.	6
Agency—E. M. Freystadt Assoc., Inc.	

Tungsten Contact Mfg. Co.	—
Agency—Furman Co., Inc.	

U

United Motors Service G.M. Corp.	15
Agency—Campbell-Ewald Co.	

V

Vaco Products Co.	—
Agency—Kinchla, Breslich & Co.	

Victor Mfg. & Gasket Co.	3rd Cover
Agency—Buchen Co.	

W

Wagner Electric Corp.	76-77
Agency—Arthur R. Mogge, Inc.	

Walker Mkt. Co.	10-11
Agency—Keeling & Co., Inc.	

Weaver Mfg. Co.	—
Agency—Arthur R. Mogge, Inc.	

Wilkening Mfg. Co.	26-27
Agency—Aitkin-Kynett Co.	

Wix Corp.	—
Agency—Humbert & Jones, Inc.	

World Bestos Corp.	—
Agency—La Grange & Garrison, Inc.	

Wudel Mfg. Co., Edmund J.	—
Agency—Mann Adv. Co., Inc.	

X

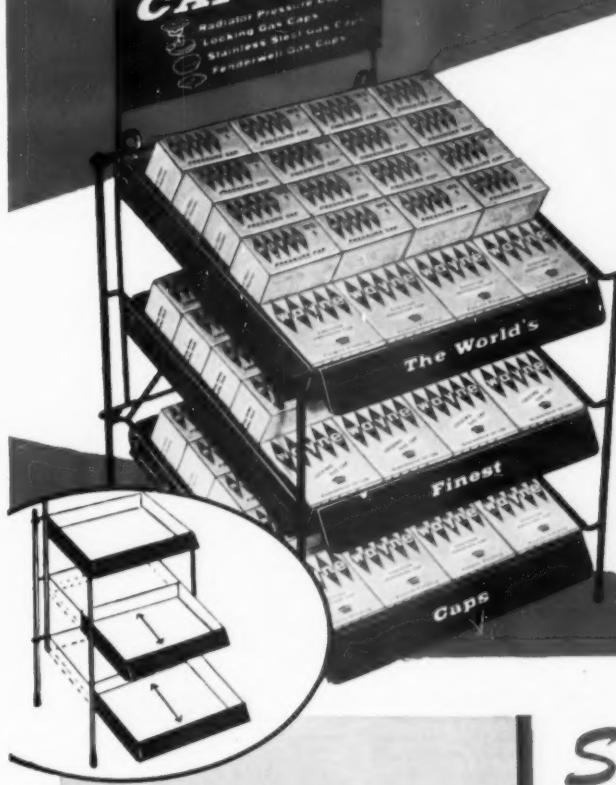
Xcelite, Inc.	—
Agency—Howard W. Nareau	

Z

Zac Lac Paint & Lacquer Corp.	—
Agency—Brindley-Roth, Inc.	

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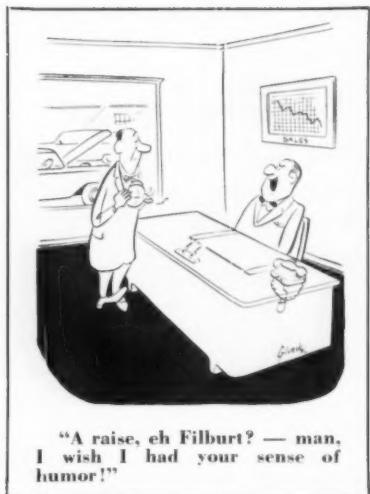
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THE LAST

LAFF



A tough drill sergeant was working during a hot afternoon session with a listless platoon. Finally he called a halt and shouted: "You guys think you're soldiers. Why, I've seen better drilling by little cans on television."



Customer: "Do you have anything for gray hair?" Conscientious Druggist: "Nothing sir, but the greatest respect."

When he returned from his vacation a friend asked: "Did you fish with flies?" "Fish with flies!" exclaimed the vacationer. "I hope to tell you I did. I fished, camped, dined and slept with them!"

A honeymoon is the vacation a man takes before going to work for a new boss.

A spry gentleman of 92 traveled by air when he went to visit his widely scattered children. On one trip his son met him at the airport and, surprised to see the old man carrying a cane, exclaimed: "Dad, I didn't know you needed a cane now." "I don't," he said with a sly wink. "But I get more attention from the hostess this way."

Teacher asked little Mike why Noah took two of each animal into the Ark. To which Mike replied: "Probable because he wasn't one of those squares who believe in storks."

Two old girls met at a class reunion. "What kind of husband do you have?" asked one. "Well, let me put it this way," answered the other, "if he mentions Daisy in his sleep—he's talking about flowers."

She: "I don't like all these flies." He: "Pick out the ones you do like—and I'll kill the rest."

A lady sent a playpen to a friend on arrival of her fifth child. "Thank you so much for the pen," the friend wrote back. "It's really wonderful. I sit in it every afternoon and read, and the kids can't get near me."



Chatter between two girls having late-day drinks at a cocktail party: "I swear, I don't understand how the Russians can be so nasty," commented one of them. "Just two sips of Vodka and I like everybody."



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